The PHOTOFACT Servicer

Set 442 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ MAY 1959

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This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

IN THIS ISSUE OF THE SERVICER:

Chevrolet Models:

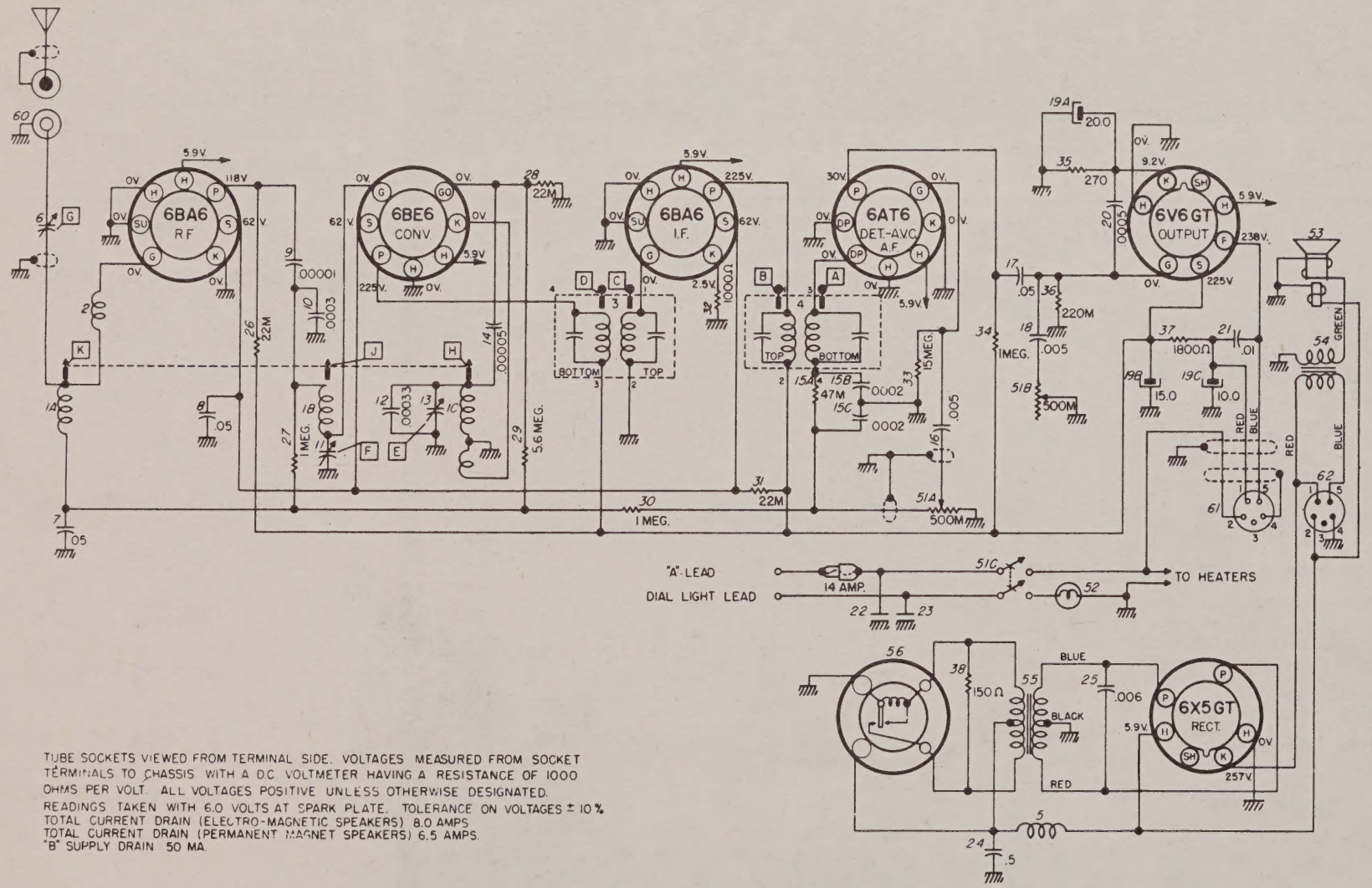
985252

985536

985538

985694

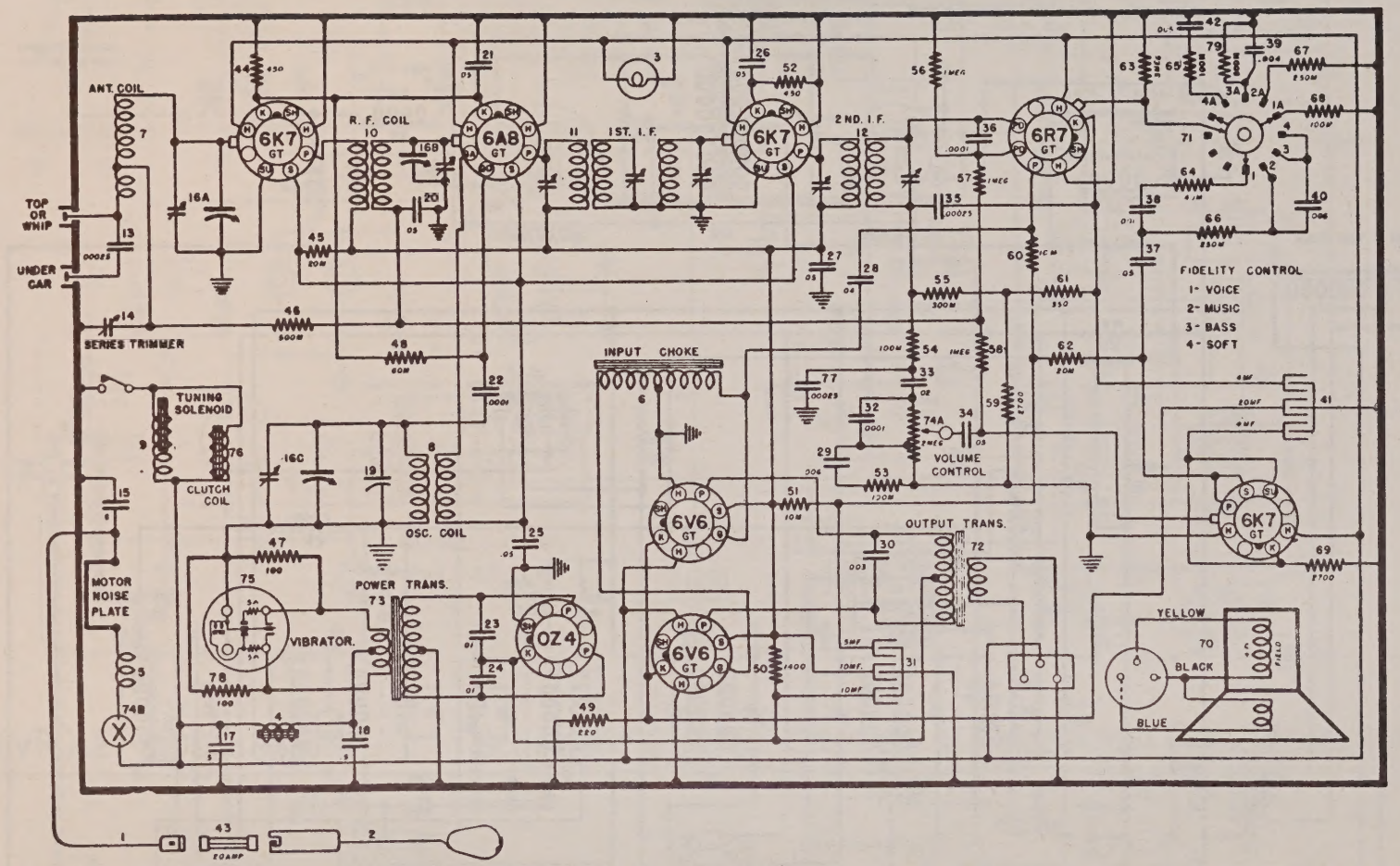
986389



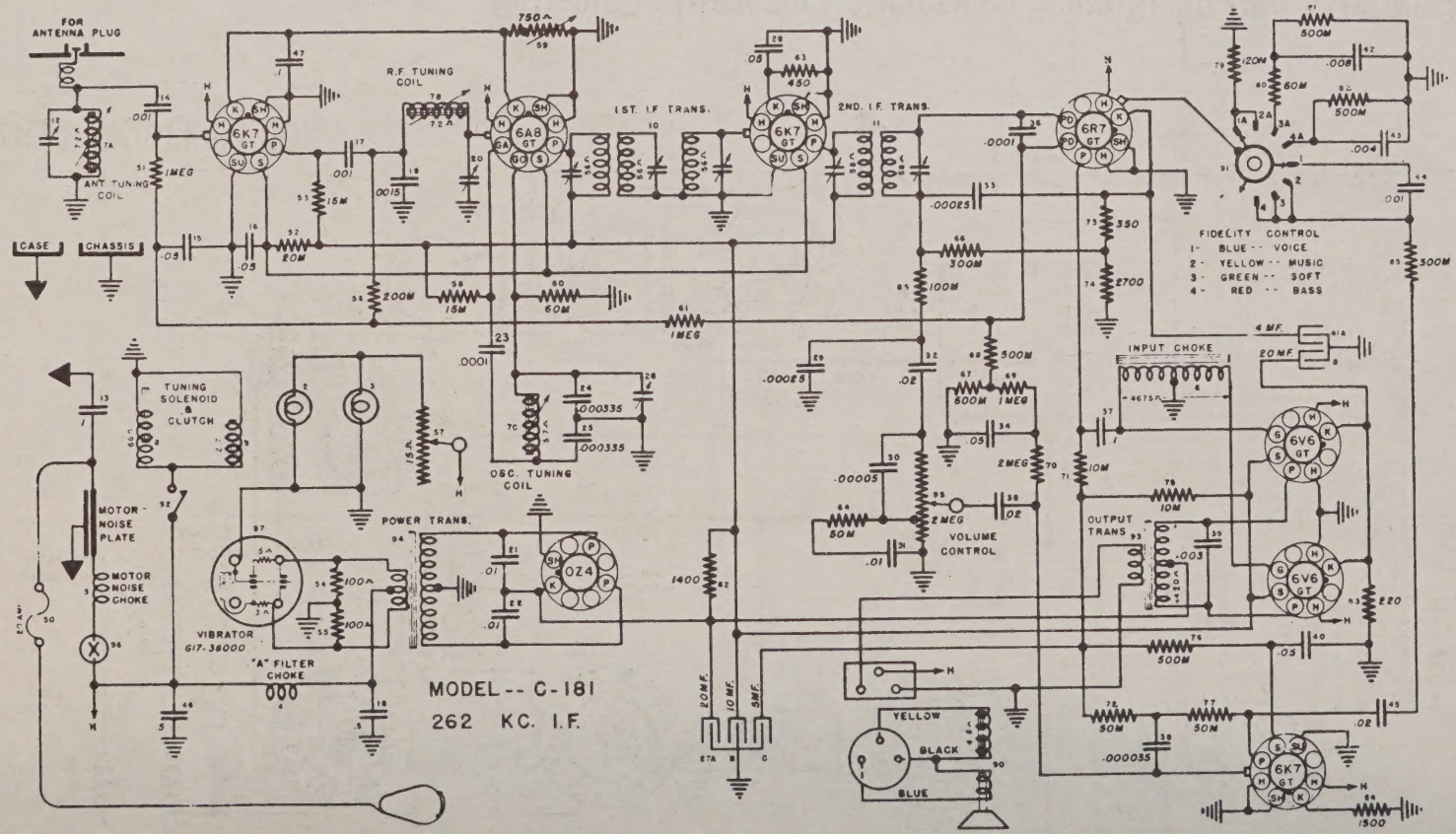
TUBE SOCKETS VIEWED FROM TERMINAL SIDE. VOLTAGES MEASURED FROM SOCKET TERMINALS TO CHASSIS WITH A D.C. VOLTMETER HAVING A RESISTANCE OF 1000 OHMS PER VOLT. ALL VOLTAGES POSITIVE UNLESS OTHERWISE DESIGNATED.
READINGS TAKEN WITH 6.0 VOLTS AT SPARK PLATE. TOLERANCE ON VOLTAGES ± 10%
TOTAL CURRENT DRAIN (ELECTRO-MAGNETIC SPEAKERS) 8.0 AMPS
TOTAL CURRENT DRAIN (PERMANENT MAGNET SPEAKERS) 6.5 AMPS.
"B" SUPPLY DRAIN 50 MA.

CHEVROLET MODEL 986389

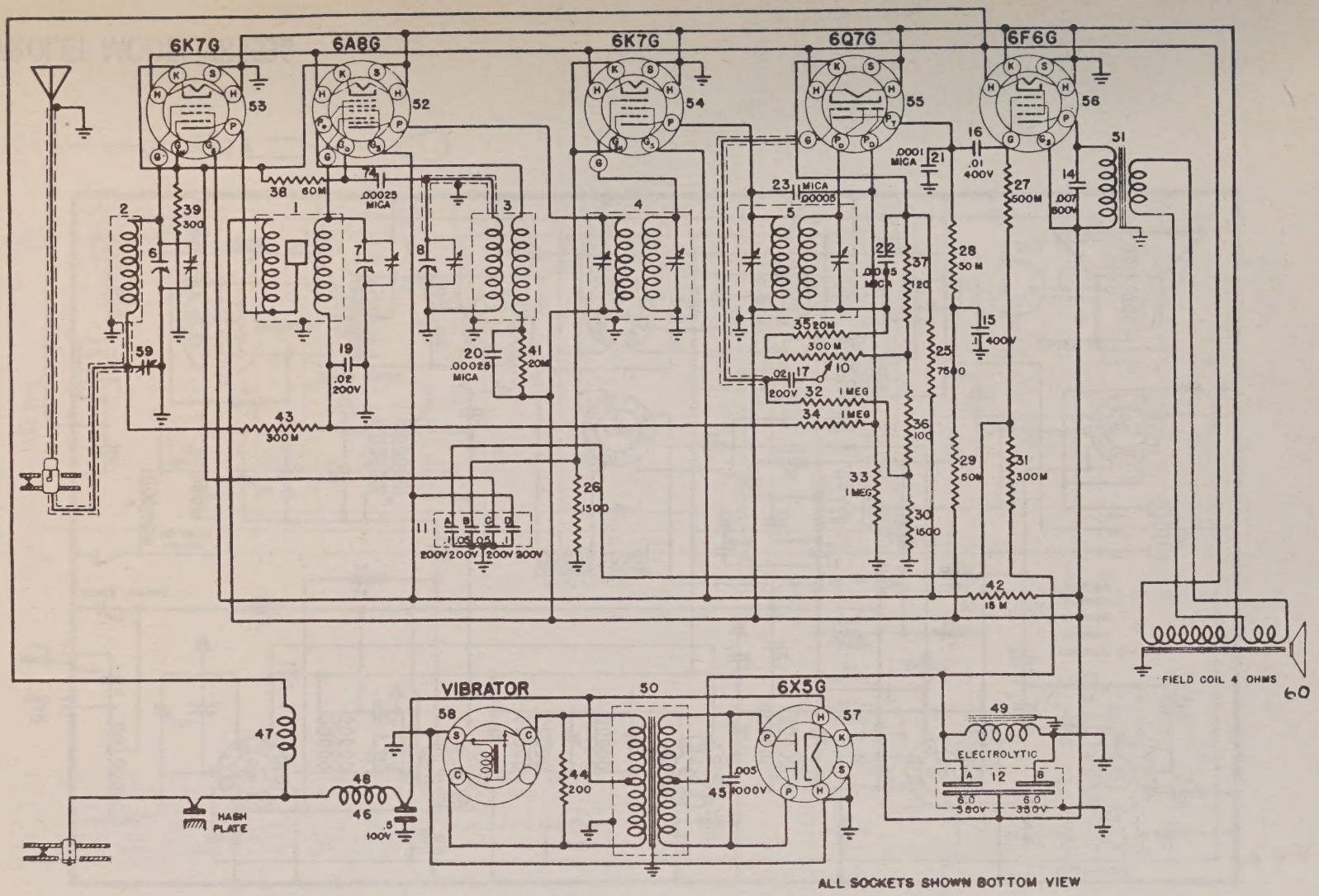
Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.



CHEVROLET MODEL 985536



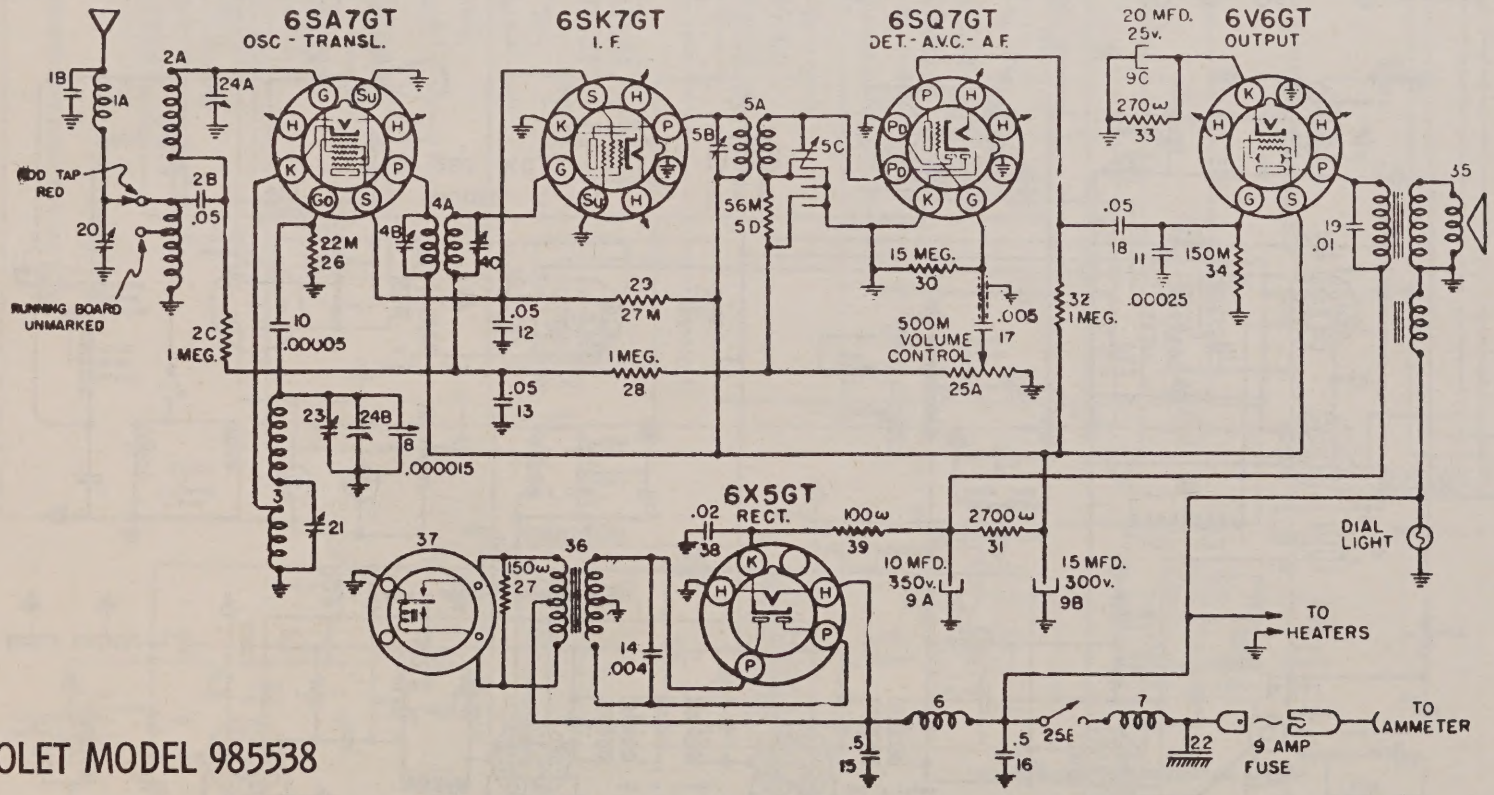
CHEVROLET MODEL 985694 Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.



CHEVROLET MODEL 985252

Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.

Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.



CHEVROLET MODEL 985538

Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.

PHOTOFACT* Folder with CIRCUITRACE*

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

MODEL M1277 (Ch. 335)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

PHOTOFACT* Folder with CIRCUITRACE*

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL M1277

1. Remove Channel Selector and Fine Tuning push-on type knobs.
2. Remove 4 wood screws holding rear cover. Remove the rear cover.
3. Remove picture tube socket, yoke plug and speaker leads.
4. Remove 3 wood screws holding AC interlock bracket.
5. Remove 2 bottom chassis bolts.
6. Remove 2 wood screws holding top chassis brackets.
7. Partially remove chassis and remove HV lead. Remove chassis.

NOTE: Control Panel leads are long enough to permit chassis servicing without panel removal.

CONTROL PANEL REMOVAL

1. Remove 4 push-on type knobs.
2. Remove 2 metal screws holding control panel to cabinet.
3. Remove control panel.

MODEL M1277 (Ch. 335)

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRADE NAME	Hoffman	MODELS	CHASSIS
		B1277, K1277, M1277, P1277, W1277	335
		B1291, B3411, B3421, K1291, M1291, M3411, M3421, SP1291, SP3411, SP3421, W1291, W3411, W3421	336
MANUFACTURER	Hoffman Radio Corp., 6200 S. Avalon Blvd., Los Angeles 3, Calif.		
TYPE SET	Television Receiver		
TUBES	VHF-Seventeen		
POWER SUPPLY	110-120 Volts AC, 60 cycles	RATING 170 Watts, 1.6 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF (UHF 14 thru 83 by conversion), Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF Oscillator is possible by removing the Channel Selector and Fine Tuning knobs.

SAFETY GLASS REMOVAL

17" MODELS: Remove 2 bottom metal screws holding front. Pull front out at bottom and remove.
21" MODELS: Remove screws in trim strip at top of the safety glass. Tilt out at the top and remove.

AGC

Observe the picture and advance the AGC control to a point where the picture distorts or a buzz is heard in the sound. Back off from this setting until the picture becomes stable with no noise in the sound.

FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see photo "Cabinet-Rear View".)

WIDTH

The width may be varied by a Width coil. (For location, see tube placement chart.)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The Horizontal Frequency coil is used as the Horizontal Hold control. (For location, see tube placement chart.)

FUSE DEVICE

A 7.5Ω fusible resistor (R83) is used for low voltage power supply protection. (For location, see tube placement chart.)

CENTERING

Centering is accomplished by a centering device behind the yoke.

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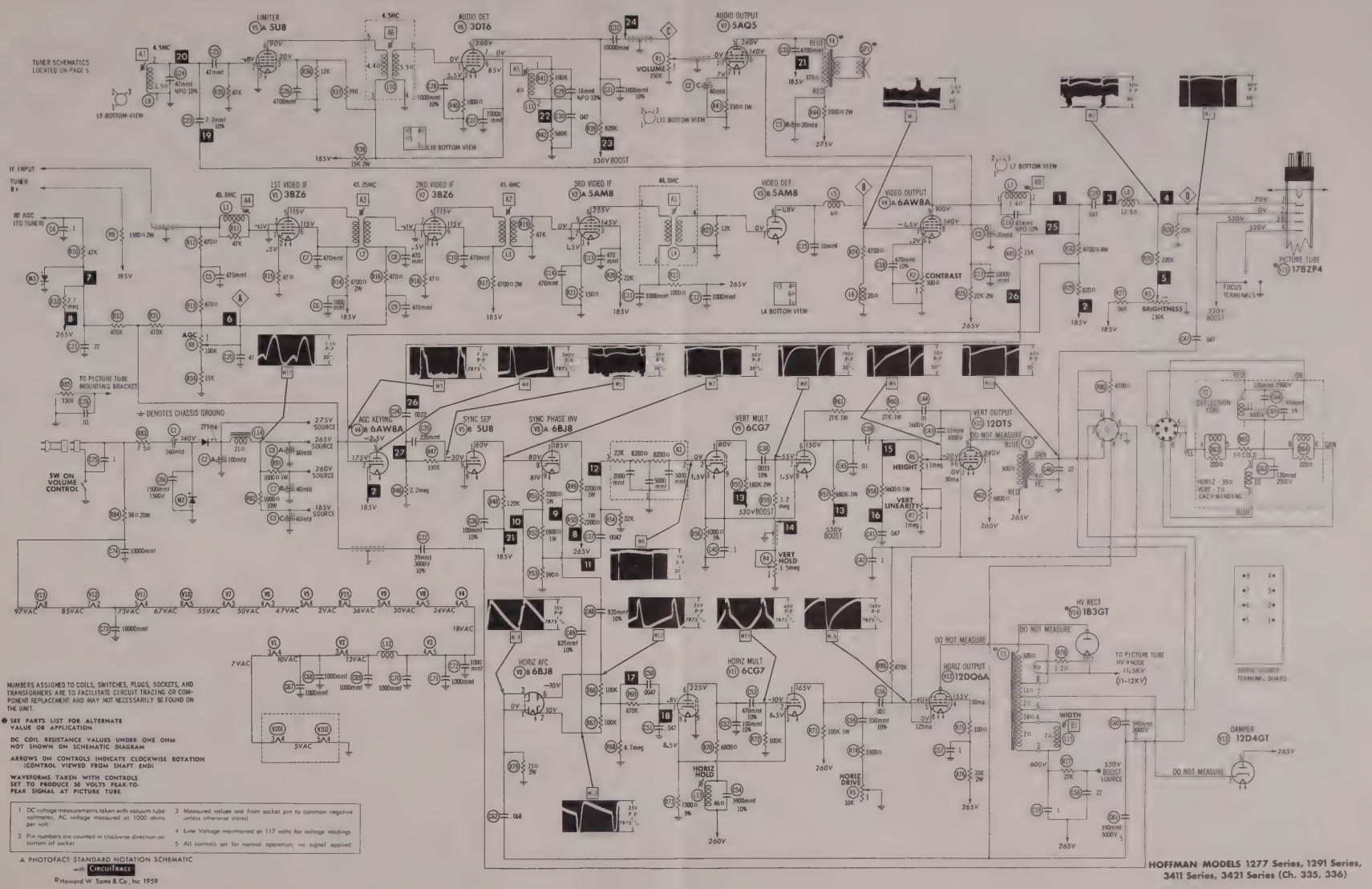
HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

SET 442 FOLDER 1



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

1 DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1000 ohms per volt

2 Pin numbers are counted in clockwise direction on bottom of socket

3 Measured values are from socket pin to common negative unless otherwise stated

4 Line Voltage maintained at 117 volts for voltage readings

5 All controls set for normal operation; no signal applied

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUIT-ACE

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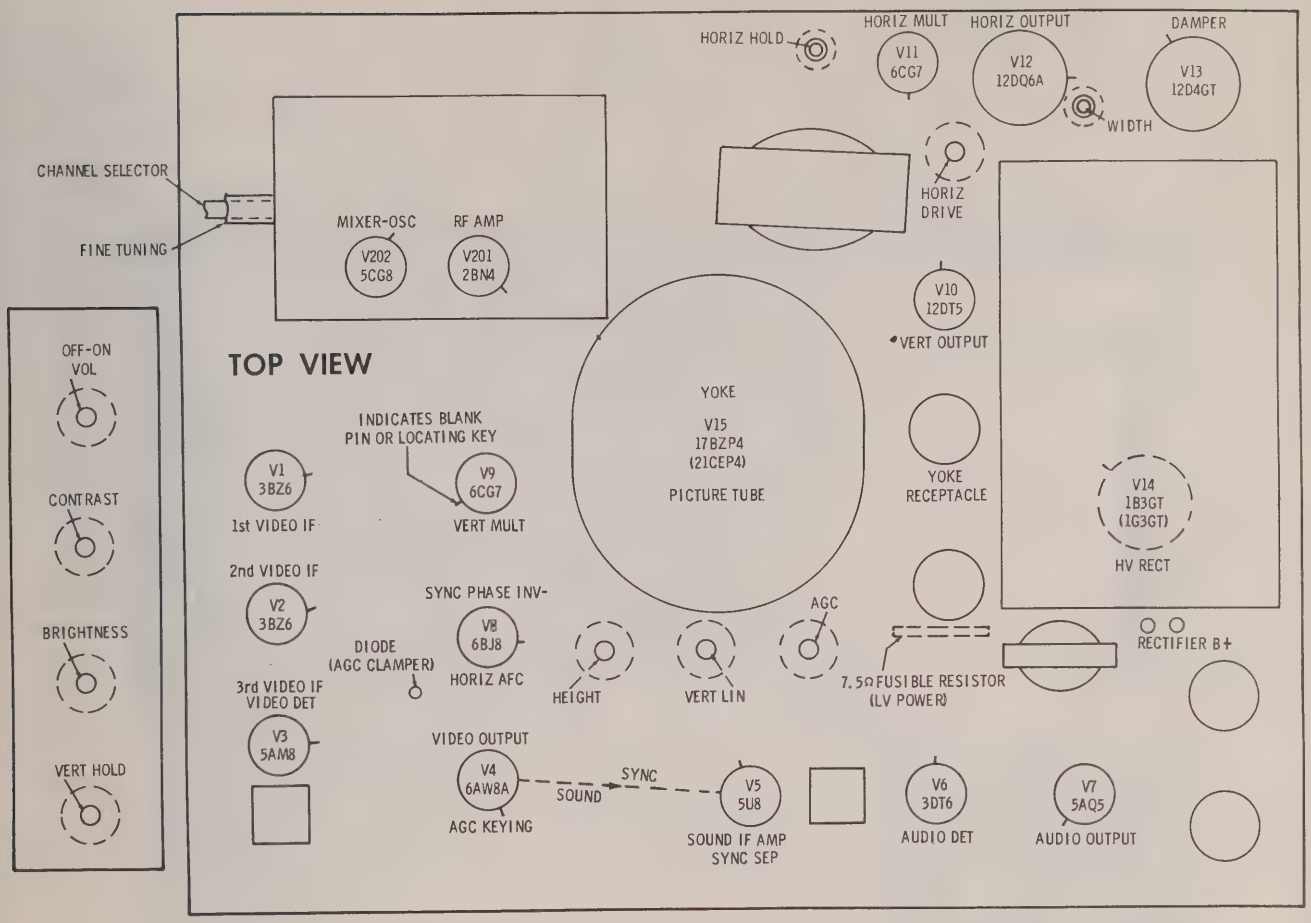
HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

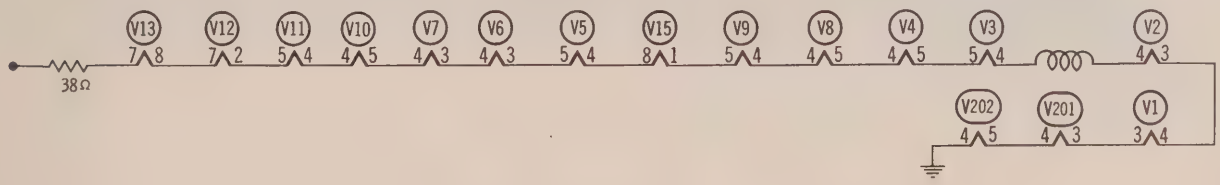
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor (7.5Ω), Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V8, V11, V12, V13, V14, V15, Rectifiers (B+)
No vertical deflection V9, V10
Poor vert. linearity or foldover V9, V10
Poor horiz. linearity or foldover V11, V12, V13
Narrow picture V11, V12, V13, Rectifiers (B+)
Vert. off freq. V9
Horiz. off freq. V11

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V15
Has pic, no sound V5, V6, V7
Overloaded picture V4

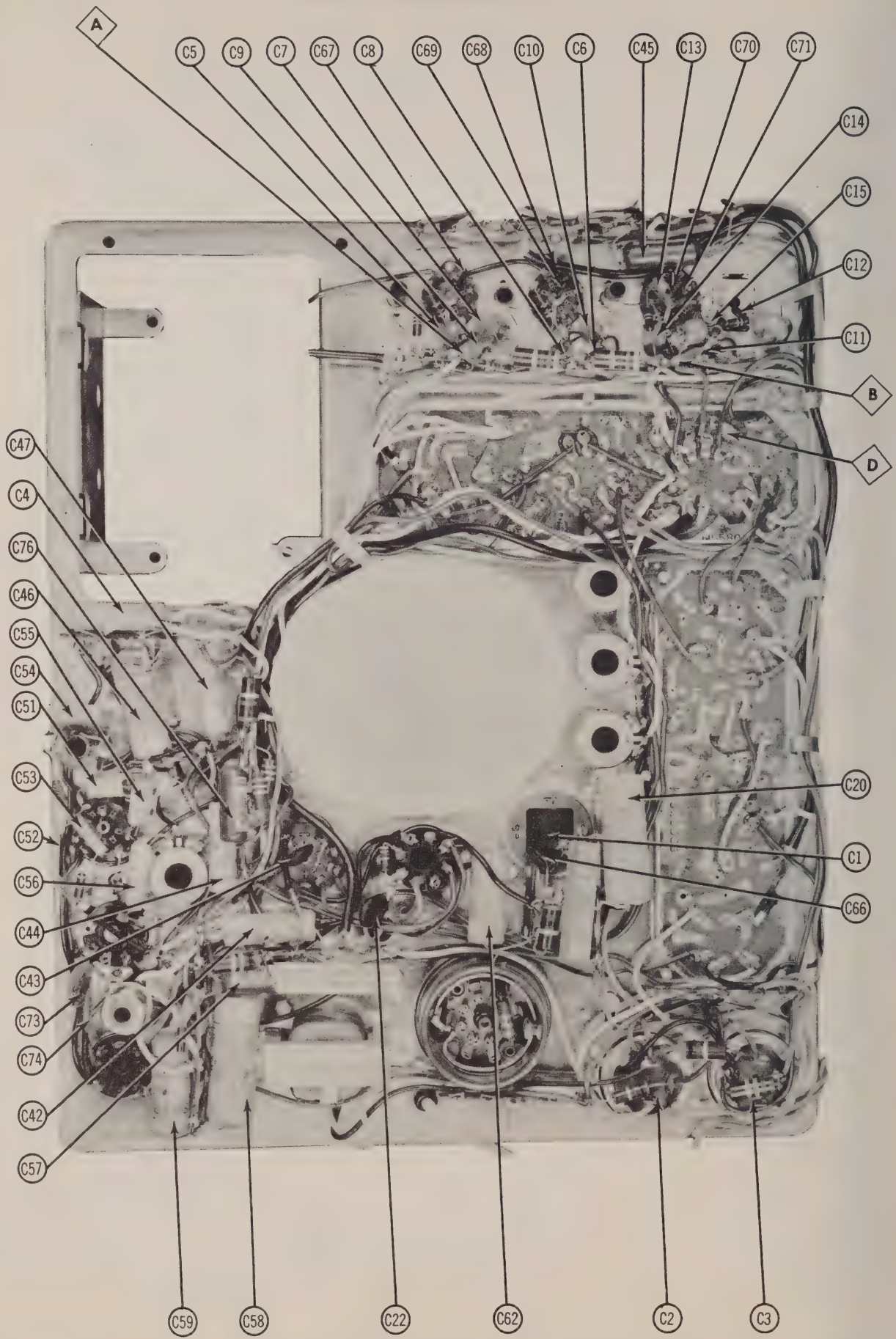
SYNC FAILURE
No vert. sync V5, V8
No horiz. sync V5, V8
No vert. or horiz. sync V5, V8

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)

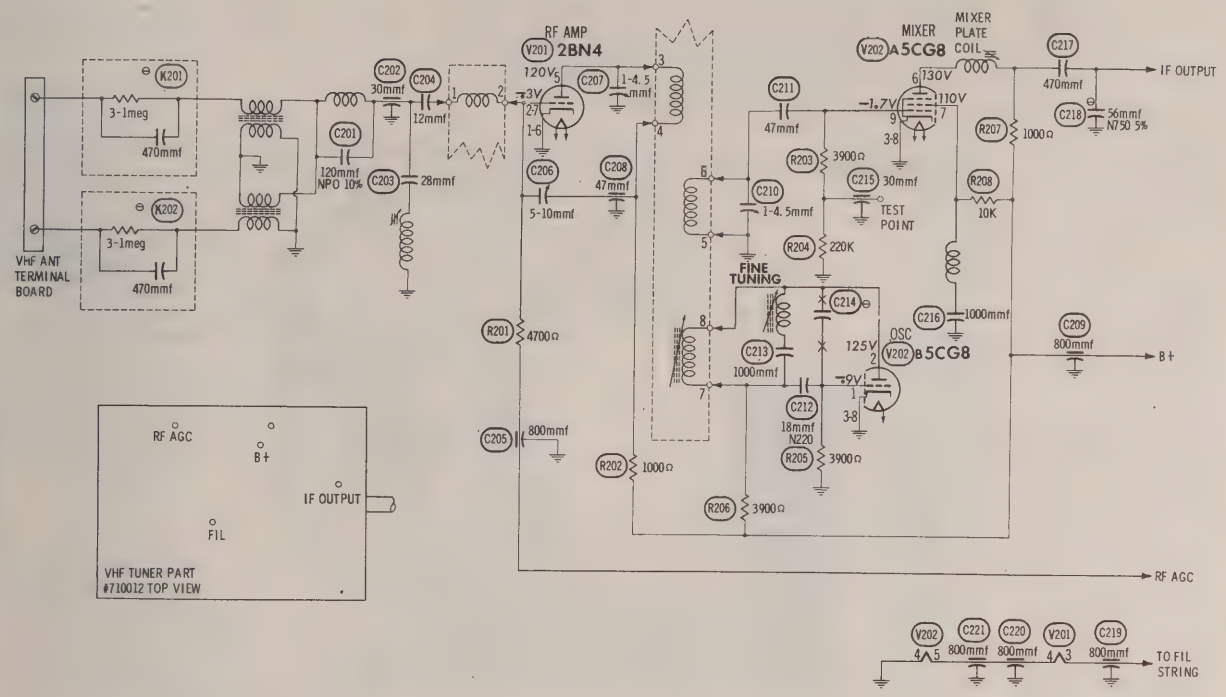


HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

FOLDER 1



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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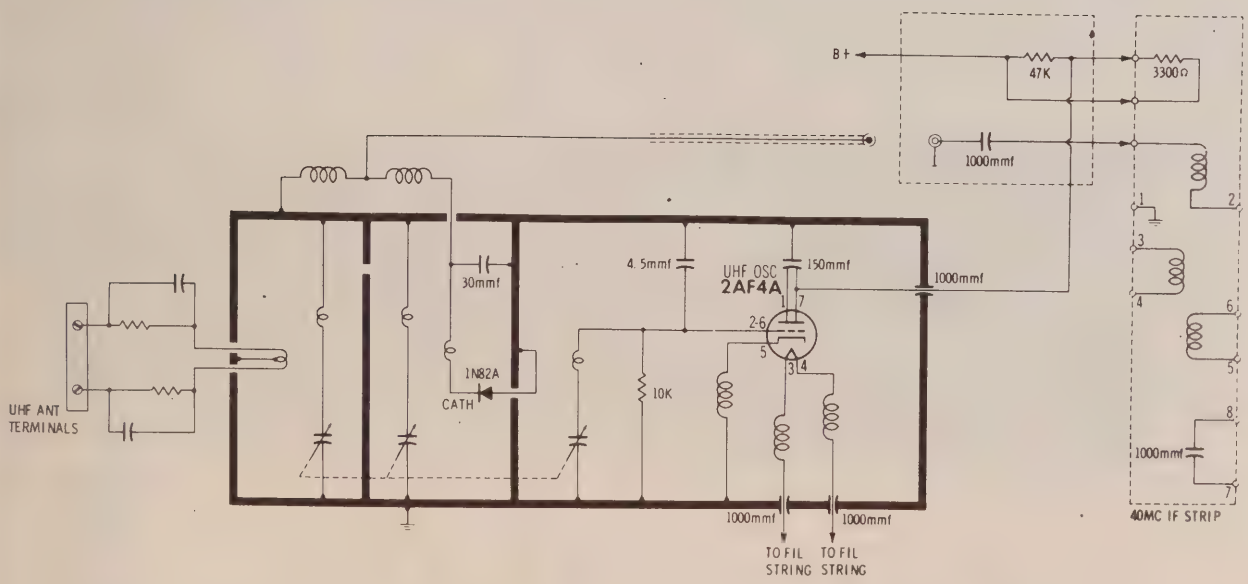
VHF TUNER 710012



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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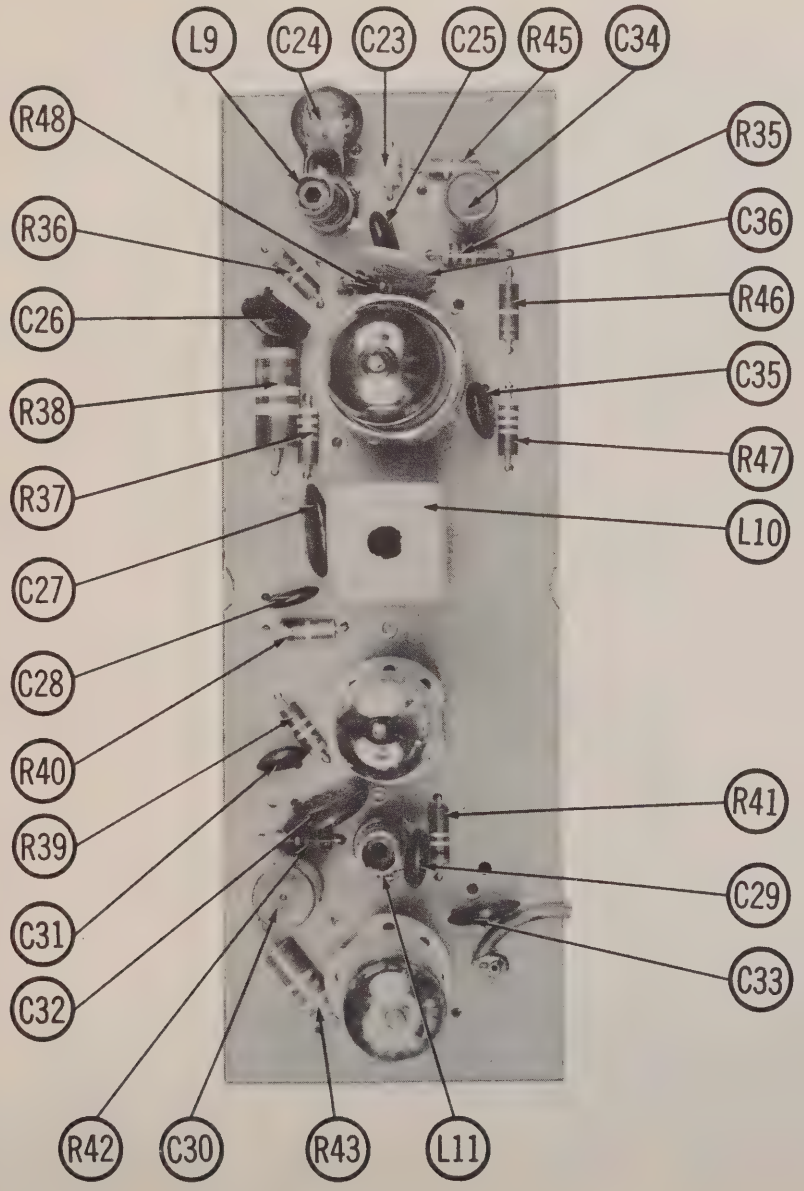
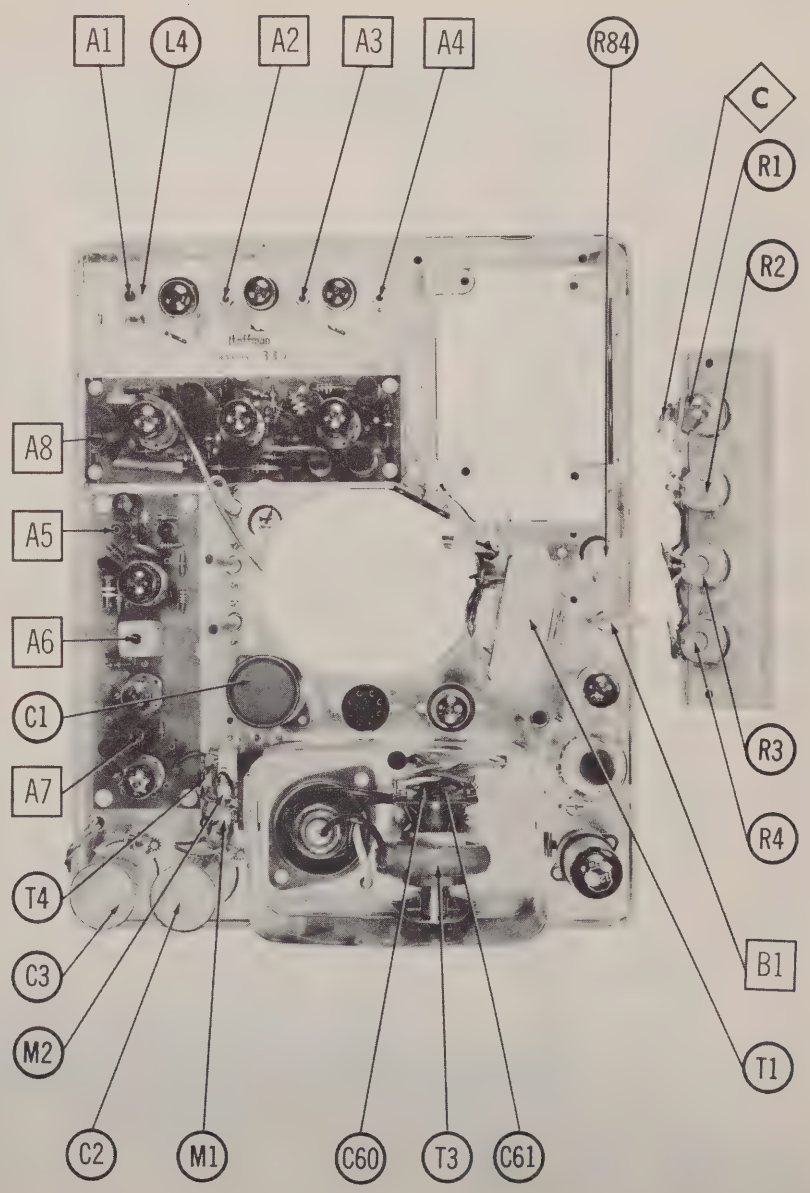
UHF TUNER 712008



SOUND PRINTED BOARD



CHASSIS - TOP VIEW

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
Allow a 20 minute warm-up period for the receiver and test equipment.
Keep all signals below a level which would cause overloading.
Remove the yoke plug to disable the High Voltage.
Suggested Alignment Tools: A1 thru A8....GENERAL CEMENT #8608, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point (A). Positive to chassis.
Connect a 1000mmf capacitor across the VTVM leads.
Set the Contrast fully counterclockwise.
Set the Fine Tuning fully clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	44MC (Unmod)	Between Channels	DC probe thru 10K to point (B). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	45.4MC	"	"	A2	"
3.	"	"	43.25MC	"	"	A3	"
4.	"	"	43MC	"	"	Mixer Plate Coil, & A4	Turn Mixer Plate Coil slug in a couple of turns. Adjust A4 for maximum deflection.
5.	"	"	45MC	"	"	Mixer Plate Coil	Adjust for maximum deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a 1000mmf capacitor across the scope leads.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	44.0MC	42.75MC 45.75MC	Between Channels	Vert. Amp. thru 10K to point (B). Low side to chassis.		Adjust signal level to just below overload. Check for response similar to Fig. 1. If necessary, retouch A2, A3 and A4 for desired response. DO NOT change A1 setting.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.05mfd	High side to point (B). Low side to chassis.	4.5MC (50KC Swp)	Between Channels	Vert. Amp. to point (C). Low side to chassis.	A5	Detune A5, A6 and A7 by turning slugs in several turns. Set generator to maximum output. Adjust A5 for maximum at second peak.
8.	"	"	"	"	"	A6	Reduce generator output until sine wave starts to scramble. Adjust for proper sine wave. Repeat until lowest generator output resulting in proper sine wave is achieved.
9.	"	"	"	"	"	A7	"
10.	"	"	"	"	"		Increase signal level over a wide range. Sine wave amplitude should remain relatively constant over a wide range of signal amplitude.

4.5MC TRAP ALIGNMENT

Set Contrast at maximum.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.05mfd	High side to point (B). Low side to chassis.	4.5MC (400∿ Mod)	Between Channels	DC probe thru detector network (Fig. 2) to point (D). Common to chassis.	A8	Adjust for MINIMUM deflection.

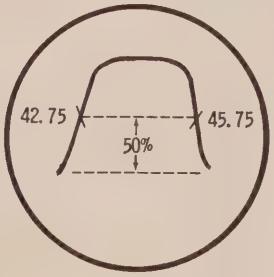


FIG.1

TUNER ALIGNMENT INSTRUCTIONS
LOCATED ON PAGE 11.

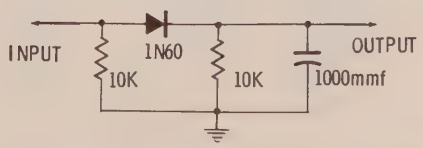


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	1st Video IF Amp.	3BZ6	
V2	2nd Video IF Amp.	3BZ6	
V3	3rd Video IF Amp - Video Det.	5AM8	
V4	Video Output-AGC Keying	6AW8A	
V5	Limiter-Sync Sep.	5U8	
V6	Audio Det	3QY6	
V7	Audio Output	5AQ5	

ITEM No	USE	TYPE	NOTES
V8	Sync Phase Inv -Horiz.AFC	6BJ8	
V9	Vert. Mult	6CG7	
V10	Vert. Output	12DT5	
V11	Horiz. Mult.	6CG7	
V12	Horiz. Output	12DQ6A	
V13	Damper	12DG7	
V14	HV Rect	1B3GT	1G3GT*

* Alternate

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	HOFFMAN PART No	GENERAL ELECTRIC PART No	RCA PART No	SYLVANIA PART No	
V15	17B2P4	17CKP4 ①	17BZP4 ②	17BZP4/ 17CAP4 ③	① "Aluminized" ② "Silverama" ③ "Silver Screen 85"
	21CEP4		21CEP4 ②	21CEP4 ③	

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	HOFFMAN PART No	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No	PYRAMID PART No	SPRAGUE PART No	
C1	180	150	857302	AFHJ-31-75	JXA0266	FP131	TMS-34	TVL-1473	
C2A	▲100	350	856909	AFH3-29-95	D0044	FP375.5		TVLS-3647*	
B	⊕40	350			BR2035				
C	▲40	350							
C3A	▲80	400	857105		D0170	FP378	TMT-43	TVLS-4657.8*	
B	20	300			BR8045	LTC65	TD-20-350		
C	⊕40	350							
D	▲20	300							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C4	.1	200		866135	P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C5	470			85132	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C6	1000			851015	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C7	470			851122	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C8	470			85123	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C9	470			851122	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C10	470			851122	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C11	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C12	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C13	470			851123	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C14	470			851123	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C15	10			854043	SI 10	DS-100	L10SI	UC-541	5GA-QS	
C16	47		NPO 10%		NPO-DI 47	DTZ-47	C10Q47C	CNO-447	5TCC-Q47S 10% *	
C17	10000				BPD-01	DD-103	BYA10SI	B-110	5HK-SI	
C18	470		10%	851122	DI 470	MD-471		JL-347	5GA-T47S 10% *	
C19	.047	400		866121	P451N-047	DF-503	BCS247J	ACE6147	4SE-S47	
C20	.47	200			P2I5N-47		BC2P47J	GEM-3047	2SF-P47	
C21	.22	200		866129	P2I5N-22		BC2P22J	ACE5022	2SE-P22	
C22	39	3000	10%	851017		DD30-390		3DY-439	30GAB-Q39S 10% *	
C23	2.2		10%	854035	NPO-SI 2.2	TCZ-2R2	C10V22C	CNO-522	5TCCB-V22S 10% *	
C24	47		NPO 10%		NPO-DI 47	MD-470	C10Q47C	CNO-447	5TCC-Q47S 10% *	
C25	47			854061	BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	
C26	4700				BPD-0047	DD-472	BYA10D47M	B-347	5HK-D47	
C27	10000				BPD-01	DD-103	BYA10SI	B-110	5HK-SI	
C28	1000		10%		DI 1000		PM6DI	JL-210	5BF-DI0	
C29	18		NPO 10%		NPO-DI 18	TCZ-18	C10Q18C	CNO-418	5TCC-Q18S 10% *	
C30	.047	200		866121	P2I5N-047	DF-503	BCS247J	ACE6147	2SE-S47	
C31	1000		10%	851003	DI 1000		PM6DI	JL-210	5BF-DI0	
C32	10000				BPD-01	DD-103	BYA10SI	B-110	5HK-SI	
C33	4700				BPD-0047	DD-472	BYA10D47M	B-347	5HK-D47	
C34	.0022	600		866305	P451N-0022	D6-222	BCS D22J	ACE6222	6SE-D22	
C35	220			85114	BPD-00022	DD-221	L10T22	B-322	5GA-T22	
C36	100		10%	851128	DI 100	MD-101	L10T1	ZT-531	5GA-T1S 10% *	
C37	.0047	600		866309	P451N-0047	D6-472	BCS D47J	ACE6247	6SE-D47	
C38	.0033	600	10%	866307			PM6D33	GTM-6233	6TM-D33	
C39	.1	600		866325	P451N-1	DF-104	BCS P1J	ACE601	6SE-P10	
C40	.1	200		866125	P2I5N-1	DF-104	BC2P1J	ACE401	2SE-P10	
C41	.047	200		866121	P2I5N-047	DF-503	BC2S47J	ACE6147	2SE-S47	
C43	.1	300		866125	P288N-1	DF-104	BC3P1J	GEM-401	3TM-P1	
C44	.12	3000		866305		DD30-120	HVA30Q12	3DY-412	30GA-Q12	
C44	.01	1600		867813	P1864CM-01	DDI6-103	CUB16SI	GEM-1611	MB-SI	
C46	.01	600		866313	P668N-01	D6-103	CUB6SI	GEM-611	6TM-SI	
C46	.22	200		866129	P288N-22		CUB2P22	GEM-2022	2TM-P22	
C47	.047	200		866121	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C48	330		10%	85117				JL-382	5GA-T33S 10% *	
C49	820		10%	85117				JL-382	5GA-T82S 10% *	
C50	.0047	200		866109	P2I5N-0047	D6-472	BC6D47J	ACE6247	2SE-D47	
C51	.047	200		866121	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C53	100		10%	851128	1469-0001	22R5T1	MCB235		MS-31	
C53	470		10%	862101	1469-00047	D6-471	22R5T47	MCB345	MS-347	
C54	3900		10%	862102	1464-0039		1R5D39		MS-239	
C55	330		10%	862103	1469-00033	D6-331	22R5T33		MS-233	
C56	.001	600		866301	P668N-001	D6-102	CUB6DI	GEM-621	6TM-DI	
C57	.1	400		866325	P448N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C58	.22	600		866329	P668N-22		CUB6P22	GEM-6022	6TM-P22	
C59	.1	800		866325	P668N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C60	330	3000		850301		DD30-331	HVB30T39		30GA-T39S *	
C61	390	3000		850301		DD30-391	HVB30T39		30GA-T39S *	
C62	.068	600		866329	P668N-068	DDI6-703	CUB6S68	GEM-6168	6TM-S68	
C63	120	2500				DD30-121	HVB30T12	5HV-312	30GA-T12	
C64	120	2500				DD30-121	HVB30T12	5HV-312	30GA-T12	
C65	95	3000	5%						30GA-Q95S 5% *	
C66	1500	1800			HVD-15-5000	DD30-152	HVC18D15	2HV-215	20GA-D15S *	
C67	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C68	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C69	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	

CAPACITORS (cont)

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP	VOLT	TOL	HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C70	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C71	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C72	1000			851013	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C73	10000			851119	BPD-01	DD-103	BYA10SI	B-110	5HK-SI	
C74	10000			851119	BPD-01	DD-103	BYA10SI	B-110	5HK-SI	
C75	.1	600		870235	P668N-1	DF-104	CUB6P1	GEM-201	6TM-P1	
C76	.01	600		870213	P668N-01	D6-103	CUB6SI	GEM-611	6TM-P1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	HOFFMAN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	330K	½	800018	B-60	A47-500K-Z	QI3-132	U48	Volume
B	Shaft			Not Req.	KSH-3	Not Req.	Not Req.	
C	Switch			KR-1	SWZ-12	76-1	US-26	Off-On
R2A	300Ω	½	800040	AB-4	B47-500-S	BI1-102	PTA52L	Contrast
B	Shaft			AK-19	Not Req.	HK3	Not Req.	
R3A	150K	½	800018	B-43	A47-150K-S	QI1-128	U43	Brightness
B	Shaft			Not Req.	KSH-3	Not Req.	Not Req.	
R4A	1.5meg	½	800017	B-742	A47-1.5meg-S	QI1-138	U155	Vert. Hold
B	Shaft			Not Req.	KSH-3	Not Req.	Not Req.	
R5A	10K	½	800009	AB-14	A47-10K-S	BI1-116	TA4L	Horiz. Drive
B	Shaft			AK-1	FKH-1/4	SK-2	Not Req.	
R6A	1meg	½	800039	AB-88	B47-1meg-S	QI1-137	PTA1254L	Height
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R7A	1meg	½	800039	AB-89	B47-1meg-S	QI1-137	PTA1254L	Vert. Lin.
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R8A	100K	½	800038	AB-60	B47-100K-S	QI1-126	PTA15L	AGC
B	Shaft			AK-19	Not Req.	TQ	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		HOFFMAN PART No.	NOTES
	OHMS	WATT		
R9	1500Ω	2	818194	
R10	47K		814212	
R11	47K		814212	
R12	470Ω		814188	
R13	470Ω		814188	
R14	4700Ω	2	818200	
R15	47Ω		814178	
R16	470Ω		814188	
R17	4700Ω	2	818200	
R18	47Ω		814178	
R19	47K		814212	
R20	22K		814208	
R21	150Ω		814182	
R22	1000Ω		814192	
R23	12K		814205	
R24	4700Ω		814200	
R25	22K	2	818208	
R26	220K		814220	
R27	56K		814213	
R28	22K		814208	
R29	820Ω		814227	
R30	4700Ω	4	818493	
R31	470K		814224	
R32	470K		814224	
R33	2.7meg		814233	
R34	15K		814206	
R35	47K		814212	
R36	12K		814205	
R37	39K		814211	
R38	15K	2	818206	
R39	820K		814227	
R40	1000Ω		814192	
R41	100K		814216	
R42	560K		814225	
R43	330Ω	1	816193	
R44	1000Ω	2	818192	
R45	15K		814206	
R46	2.2meg		814232	
R47	330K		814222	

ITEM No.	RATING		HOFFMAN PART No.	NOTES
	OHMS	WATT		
R48	120K		814217	
R49	2200Ω	1	816203	
R50	2200Ω	1	816203	
R51	2200Ω	1	816203	
R52	1800Ω	1	816202	
R53	390Ω		814187	
R54	22K		814208	
R55	180K	2	818219	
R56	1000Ω 5%		814192	
R57	560K	1	816233	
R58	5600Ω	1	816208	
R59	1.2meg		814229	
R60	27K	1	816216	
R61	27K	1	816216	
R62	6800Ω		814202	
R63	220Ω			
R64	220Ω			
R65	3Ω Cold			
R66	100K		814216	
R67	100K		814216	
R68	4.7meg		814236	
R69	470K		814224	
R70	6800Ω		814202	
R71	100K	1	816233	
R72	100K		814216	
R73	1500Ω 5%		814067	
R74	3300Ω		814198	
R75	100Ω		814180	
R76	10K	2	818204	
R77	22K		814208	
R78	1.2Ω		815163	
R79	15Ω	2	818170	
R80	4700Ω		814200	
R81	100Ω	1	816199	
R82	1000Ω	10	825425	
R83	7.5Ω		830002-1	
R84	39Ω	20	827004	
R85	330K		814222	
R86	470K		814224	

COMPONENT COMBINATIONS

ITEM No	USE	DESCRIPTION	HOFFMAN PART No	REPLACEMENT DATA
K1	Vert. Integrator	2000mmf, 5000mmf, 5000mmf, 8200Ω, 8200Ω, 22K	986007	Aerovox PA-110 Centralab PC-104 Sprague V1/V3

COILS (RF-IF)

ITEM No	USE	REPLACEMENT DATA					NOTES
		HOFFMAN PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	1st Video IF	762008	17-4534	TV-131		VF-4	
L2	2nd Video IF	762017	17-4523	TV-130	6219	VF-3	
L3	3rd Video IF	762017	17-4523	TV-130	6219	VF-3	
L4	4th Video IF	760019	17-5004	TV-128	6234		
L5	Series Peaking Coil	771008	19-3100	TV-161	6112	VP-3	100 Microhenries
L6	Shunt Peaking Coil	771019		TV-307	6156		820 Microhenries
L7	4.5MC Trap	762014					
L8	Series Peaking Coil	771330	19-3330	TV-200	6132	VP-7	330 Microhenries
L9	1st Sound IF	762014					
L10	2nd Sound IF	760017					
L11	Quadrature Coil	774005					
L12	Fil. Choke		19-3001	TV-189	6175		.82 Microhenry IRC Part #CLA

TRANSFORMER (HORIZ. OSC.)

ITEM No	DC RES		REPLACEMENT DATA						NOTES
	PRI.	SEC.	HOFFMAN PART No.	Meissner PART No	Merit PART No	Miller PART No.	Ram PART No	Thordarson PART No	
L13	46Ω		788012		TV-163	6210	H-102	HS-5	Horiz. Freq.

FILTER CHOKE

ITEM No	RATINGS		REPLACEMENT DATA							NOTES
	CURRENT (Measured)	DC RES	HOFFMAN PART No	Halldorson PART No	Merit PART No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No	
L14	280A	2Ω	5 Hy						C-27X	

COILS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA								NOTES
		HOFFMAN PART No	Halldorson PART No	Merit PART No	Miller PART No	Ram PART No	Rogers PART No	Stancor PART No	Thordarson PART No	Triad PART No	
L15	Width Coil (1.5-12MH)	778003		MWC-6	6322	20IR15 ①	QRC108	MC-8A	WC-22 ①		

① Drill new mounting hole.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA								NOTES
		HOFFMAN PART No	Halldorson PART No	Merit PART No	Ram PART No	Rogers PART No	Stancor PART No	Thordarson PART No	Triad PART No	
T1	Vert. Output	728007-2							A-113X	
	Alt. Vert. Output	728007								
T2	Yoke-Horiz. (18MH) (110°)-Vert. (13MH)	790007			Y-110 ① ②		DY-26A ② ③	Y-48 ②③	Y-60-2 ③	
	Rear Cover & Centering Device	964003							YC-110	
T3	Horiz. Output	782006-1		FB490 * $			HO-289 * $	FLY-150*$	D-160 *	
	Alt. Horiz. Output	782006						$		

① Connect yoke terminal #2 to yoke plug pin #3, yoke terminal #1 to yoke plug pin #6, yoke terminal #10 to yoke plug pin #8.
② Use original rear cover and centering device.
③ Use original yoke plug and connect same as original.
④ Drill new mounting hole(s).
$ This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

	ORIGINAL TERMINAL (CONNECTIONS)	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
	8	5				5	5	8
	7	4				4	4	4
	6	3				3	3	3
	4	2				2	2	2
	3	1				1	1	1
Special Rates →	4 & 3	2 & 1				2 & 1	2 & 1	2 & 1

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	HOFFMAN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	7000Ω	3-4Ω	724015-1 ① 724015 ②	Z1113	A-2931	AU-802	A-3878	24B49	S-7X	① Part #724017 used in Ch. 336. ② Alternate Part No.

SPEAKER

ITEM No	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP	HOFFMAN PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	708004 ①	4A07	① 1277 Series, 1291 Series
	8"	PM		708601 ②		② 3421 Series
	4" x 6"	PM	3-4Ω	708903 ③		③ 3411 Series
	3½"	PM		708009 ④		④ 3411 Series, 3421 Series

RECTIFIERS

ITEM No	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	HOFFMAN PART No.	FEDERAL PART No.	INTERNATIONAL PART No	SARKES TARZIAN PART No.		
M1	.275A	746001 ①	HF504 ①	SD-500 ①	M500 ①	① Silicon Type.	
M2	275A	746001 ①	HF504 ①	SD-500 ③	M500 ①	② Selenium Type.	
M3		744003 ②	1215 ②	1T1 ①			

MISCELLANEOUS

ITEM No.	PART NAME	HOFFMAN PART No.	NOTES
M4	Tuner	710012	VHF
	Tuner	713008	UHF, Requires "Standard Coil" conversions strip
	Printed Board	335001	Main
	Printed Board	331003	Sound

HOFFMAN MODELS 1277 Series, 1291 Series, 3411 Series, 3421 Series (Ch. 335, 336)

FOLDER 1

PARTS LIST AND DESCRIPTIONS (Continued)

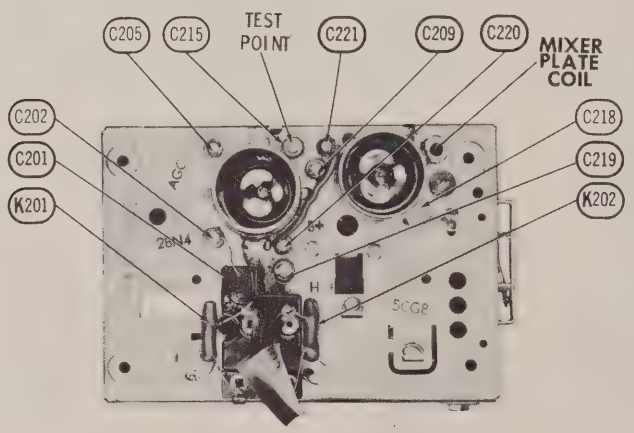
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

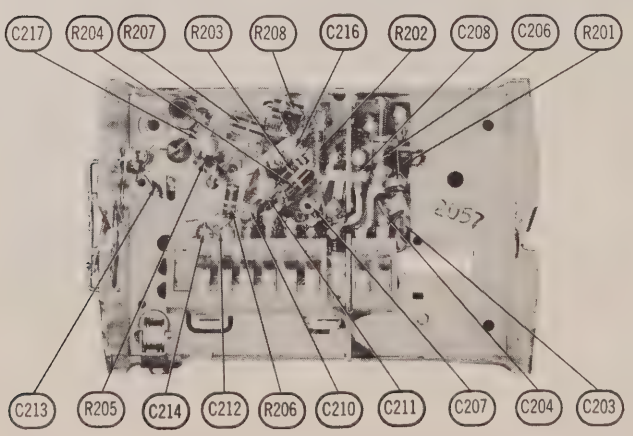
NAME	PART NO.	DESCRIPTION
Safety Glass	408003	1277 Series
Safety Glass	430008	1291 Series, 3411 Series, 3421 Series
Mask	406008	1291 Series, 3411 Series, 3421 Series
Knob	480060	Channel Selector
Knob	498013	Fine Tuning
Knob	500025	Volume-On-Off, Brightness, Contrast, Vert. Hold
Handle	290005	
Cabinet	341618	Black, Model B1277
Cabinet	346016	Mahogany, Model K1277
Cabinet	346017	Oak, Model M1277
Cabinet	346020	Provincial, Model P1277
Cabinet	346019	Walnut, Model W1277
Cabinet	346013	Black, Model B1291
Cabinet	346011	Mahogany, Model K1291
Cabinet	346012	Oak, Model M1291
Cabinet	345015	Provincial, Model SP1291
Cabinet	346014	Walnut, Model W1291
Cabinet	345020	Mahogany, Model B3411
Cabinet	345021	Oak, Model M3411
Cabinet	345023	Provincial, Model SP3411
Cabinet	345022	Walnut, Model W3411
Cabinet	352026	Mahogany, Model B3421
Cabinet	352027	Oak, Model M3421
Cabinet	352028	Provincial, Model SP3421
Cabinet	352029	Walnut, Model W3421

WIRING DATA

High Voltage Lead	Use BELDEN No.	8869
Shielded Hook-up Wire	Use BELDEN No.	8885 (Single Conductor)
		8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors
		8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No.	8874
300Ω Tuner Input Lead	Use BELDEN No.	8225
300Ω Antenna Lead-in	Use BELDEN No.	8230 or 8275
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) - 4 Conductor
		8485 (Round) - 5 Conductor
		8488 (Round) - 8 Conductor



TUNER—TOP VIEW



TUNER— BOTTOM VIEW

TUNER PARTS LIST AND DESCRIPTIONS

710012

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	2BN4	

ITEM No.	USE	TYPE	NOTES
V202	Mixer-Osc.	5CG8	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	120		NPO 10%		NPO-DI 120	DTZ-120		CNO-312	5TCC-T12S 10%*	
C202	30									
C203	28									
C204	12									
C205	800				EF-001	MFT-1000			503C-D1	
C206	5-10					829-10				
C207	1-4.5					829-6		CT551		
C208	47				EF-00005	MFT-50				
C209	800				EF-001	MFT-1000			503C-D1	
C210	1-4.5					829-6		CT551		
C211	47									
C212	18		N220							
C213	1000				BPD-001	DD-102		B-210	5HK-D1	
C214										①
C215	30									
C216	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C217	470				BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C218	56		N750 5%				C10Q56U	CN7-456		②
C219	800				EF-001	MFT-1000			503C-D1	
C220	800				EF-001	MFT-1000			503C-D1	
C221	800				EF-001	MFT-1000			503C-D1	

* Not normally in distributors stock. Available thru distributor on order to manufacturer.
① Not used in some versions.
② Some versions may use a 68mmf in this application.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		HOFFMAN PART No.	NOTES
	OHMS	WATT		
R201	4700Ω			
R202	1000Ω			
R203	3900Ω			
R204	220K			

ITEM No.	RATING		HOFFMAN PART No.	NOTES
	OHMS	WATT		
R205	3900Ω			
R206	3900Ω			
R207	1000Ω			
R208	10K			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	HOFFMAN PART No.	REPLACEMENT DATA
K201	Ant. Input Isolation	470mmf, .3-1meg	①	Sprague ACI-1
K202	Ant. Input Isolation	470mmf, .3-1meg	①	Sprague ACI-1

① Some versions may use individual components of 680K and 470mmf.

TUNER ALIGNMENT INSTRUCTIONS

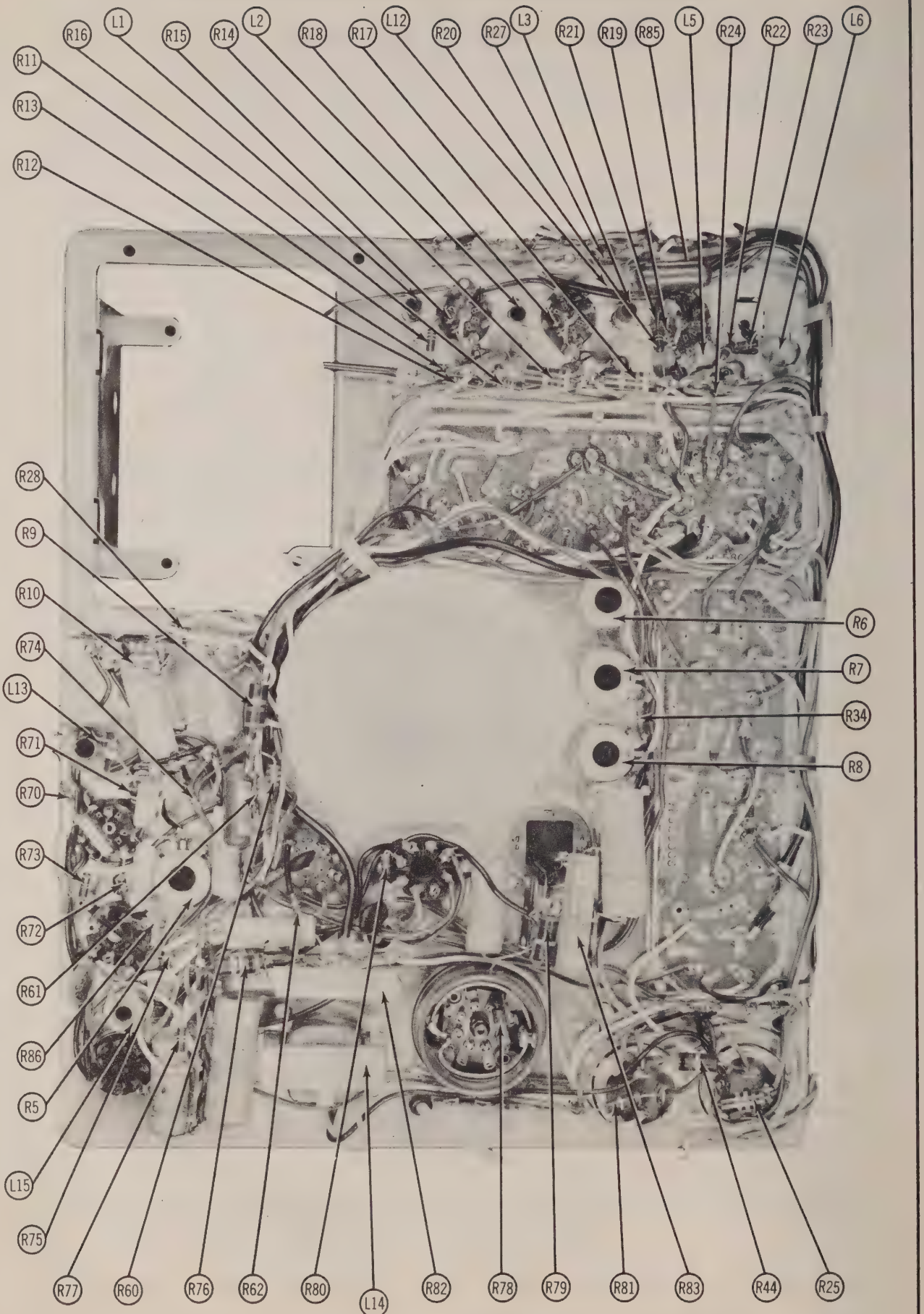
VHF OSCILLATOR ALIGNMENT

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987
WALSCO #2531

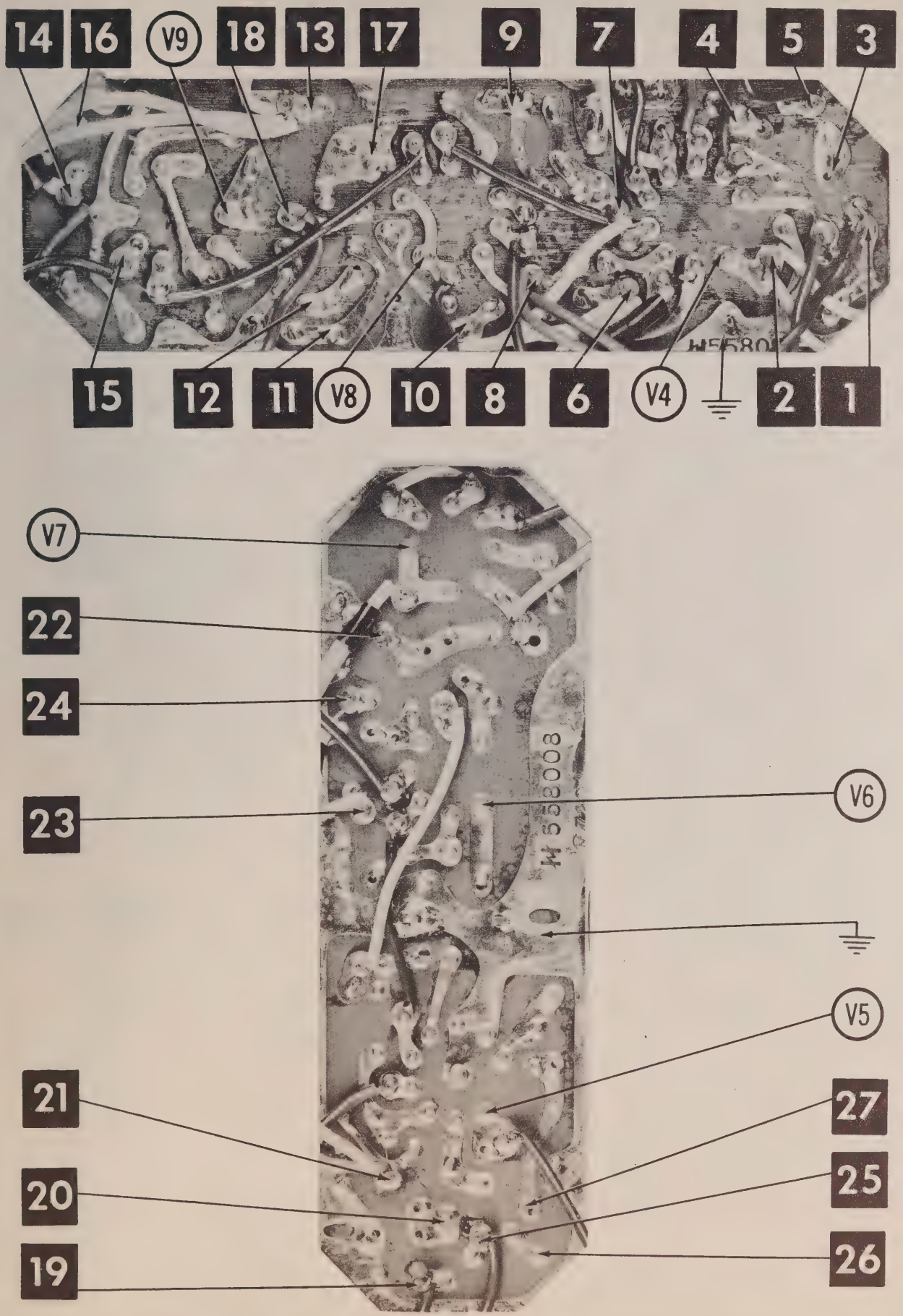
The individual channel adjustment slugs are accessible one at a time, thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning fully counterclockwise and switch to channel to be adjusted. Adjust for sound bars in the picture. Repeat for each channel to be adjusted. Normal picture and sound will then be obtained with the Fine Tuning at about mid-range.

VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



A Howard W. Sams CIRCUITRACE* Photo

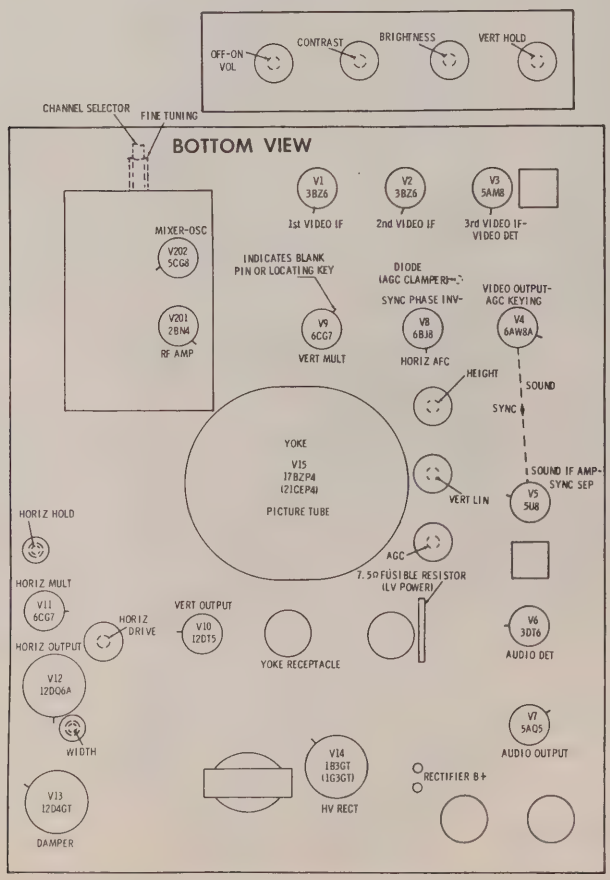
PRINTED BOARDS

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

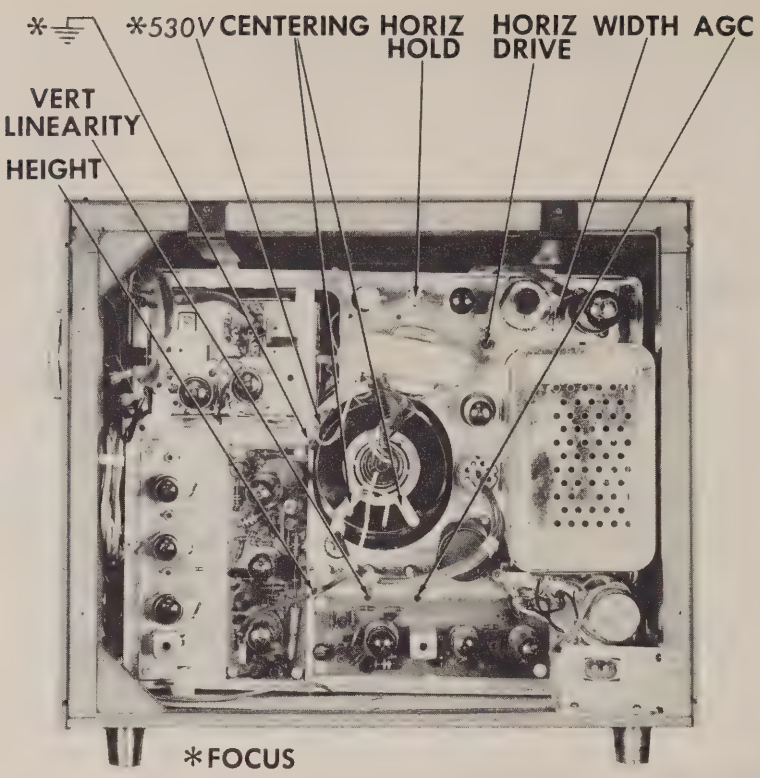
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	100K	47Ω	2Ω	2.5Ω	†5700Ω	†5700Ω	0Ω		
V2	3BZ6	100K	47Ω	2.5Ω	3Ω	†5700Ω	†5700Ω	0Ω		
V3	5AM8	150Ω	.1Ω	†23K	3Ω	4Ω	†1000Ω	.1Ω	4700Ω	0Ω
V4	6AW8A	†1000Ω	†1800Ω	●500K	5.5Ω	4Ω	●40Ω	4700Ω	†22K	†6500Ω
V5	5U8	†120K	47K	†40K	10Ω	11Ω	†16K	0Ω	0Ω	2.5meg
V6	3DT6	5.5Ω	1000Ω	11Ω	12Ω	‡840K	†16K	560K		
V7	5AQ5	0Ω	330Ω	12Ω	13Ω	†1400Ω	†22K	0Ω		
V8	6BJ8	15Ω	4.8meg	15Ω	7Ω	5.5Ω	4.8meg	†4400Ω	†120K	4400Ω
V9	6CG7	‡200K	60K	1000Ω	7Ω	8.5Ω	‡700K	●2.5meg	1000Ω	1000Ω
V10	12DT5	†7800Ω	NC	1meg	15Ω	13Ω	1meg	0Ω	NC	†300Ω
V11	6CG7	†100K	100K	1500Ω	15Ω	16.5Ω	†7800Ω	5.2meg	1500Ω	0Ω
V12	12DQ6A	NC	16.5Ω	NC	†10K	1meg	NC	18.5Ω	0Ω	TOP CAP ‡11Ω
V13	12D4GT	NC	NC	¶ INF	NC	†0Ω	NC	20Ω	18.5Ω	
V14	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡330Ω
V15	17BZP4	8.5Ω	22K	‡22K	‡22K	NC	22K	●250K	10Ω	
V201	2BN4	0Ω	750K	2Ω	1.5Ω	†3500Ω	0Ω	750K		
V202	5CG8	3900Ω	†6400Ω	0Ω	0Ω	1.5Ω	†3500Ω	†12K	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 265 V. SOURCE.
‡ MEASURED FROM PIN 3 OF V13 NC NO CONNECTION



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the Brightness and Contrast controls for a normal picture.

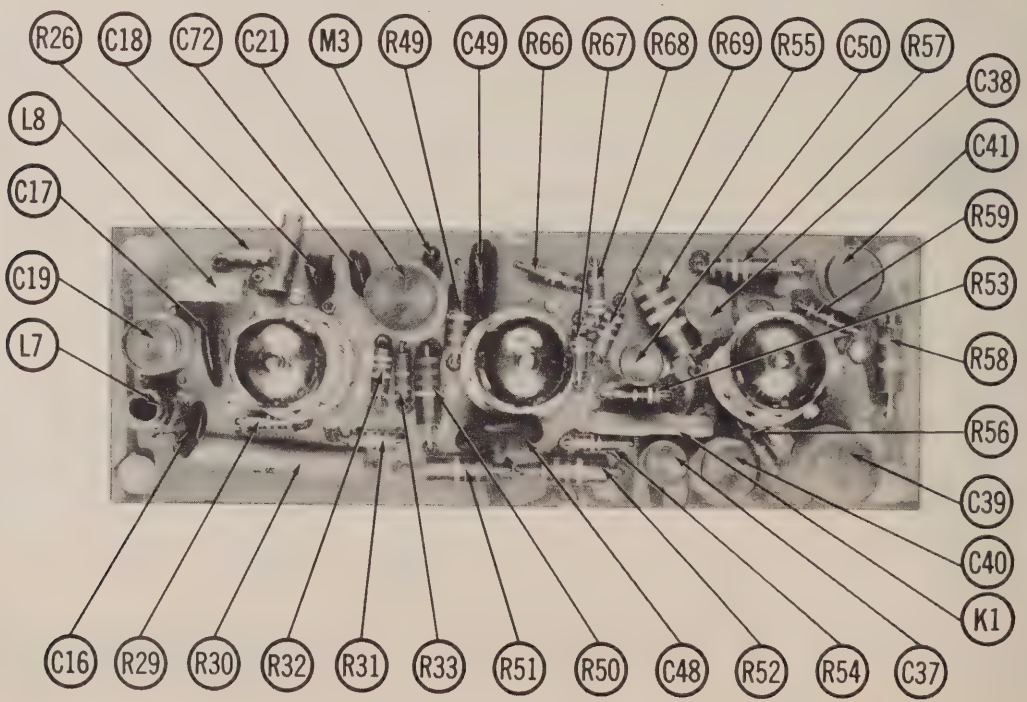
Turn the Horizontal Hold clockwise until the picture loses sync. It may be necessary to switch off channel and back again for picture to lose sync.

Turn the Horizontal Hold slowly counterclockwise until the picture just falls into sync.

Turn to an unused channel. If vertical lines appear near the center of the screen, slowly adjust the Horizontal Drive (R5) until white lines disappear.

If the Horizontal Drive was adjusted, tune in a TV station and repeat preceding steps.

Adjust the Width slug (B1) for a picture slightly wider than necessary to fill the picture mask horizontally.



MAIN PRINTED BOARD

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

MUNTZ MODELS 17PD, 17PS (Ch. J)

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MUNTZ MODELS
17PD, 17PS (Ch. J)

MODEL 17PS (Ch. J)

MUNTZ MODELS
17PD, 17PS (Ch. J)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

DATE 5-59

SET 442 FOLDER 2

PHOTOFACT* Folder

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 17PS

1. Remove 4 metal screws holding top control escutcheon.
2. Remove 6 push-on type knobs.
3. Remove 7 metal screws holding rear cover. Remove the rear cover.
4. Remove picture tube socket, HV and speaker leads, and yoke clamp.
5. Remove 7 metal screws holding top half of cabinet. Remove top half of cabinet.
6. Remove 4 bottom chassis bolts.
7. Remove chassis and yoke from rear of cabinet.
8. Loosen bolt holding picture tube retaining band.
9. Remove picture tube.

MODEL 17PS (Ch. J)

MUNTZ MODELS
17PD, 17PS (Ch. J)

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

MUNTZ MODELS
17PD, 17PS (Ch. J)

TRADE NAME	Muntz Models 17PD, 17PS
MANUFACTURER	Muntz TV Inc., 1000 Grey Avenue, Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Twelve
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 120 Watts, 1.15 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

Coarse adjustment of Horizontal Hold is accomplished by proper setting of Horizontal Frequency slug. (For location, see tube placement chart.)

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Discriminator secondary (A10) located on top of chassis.

FUSE DEVICE

A 5Ω fusible resistor (R71) is used for low voltage power supply protection. (For location, see tube placement chart.)

CENTERING

Centering is accomplished by a centering device on the yoke rear cover.

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustment of the VHF Oscillator, it is necessary to remove the chassis. (See disassembly instruction.)

PICTURE TUBE SAFETY GLASS CLEANING

For picture tube, and safety glass cleaning it is necessary to remove the chassis. (See disassembly instructions.)

AGC

No provision is made to vary the AGC on this receiver. Model 17PD has a Local-Distance switch.

FOCUS

No provision is made to vary the focus on this receiver.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of J129

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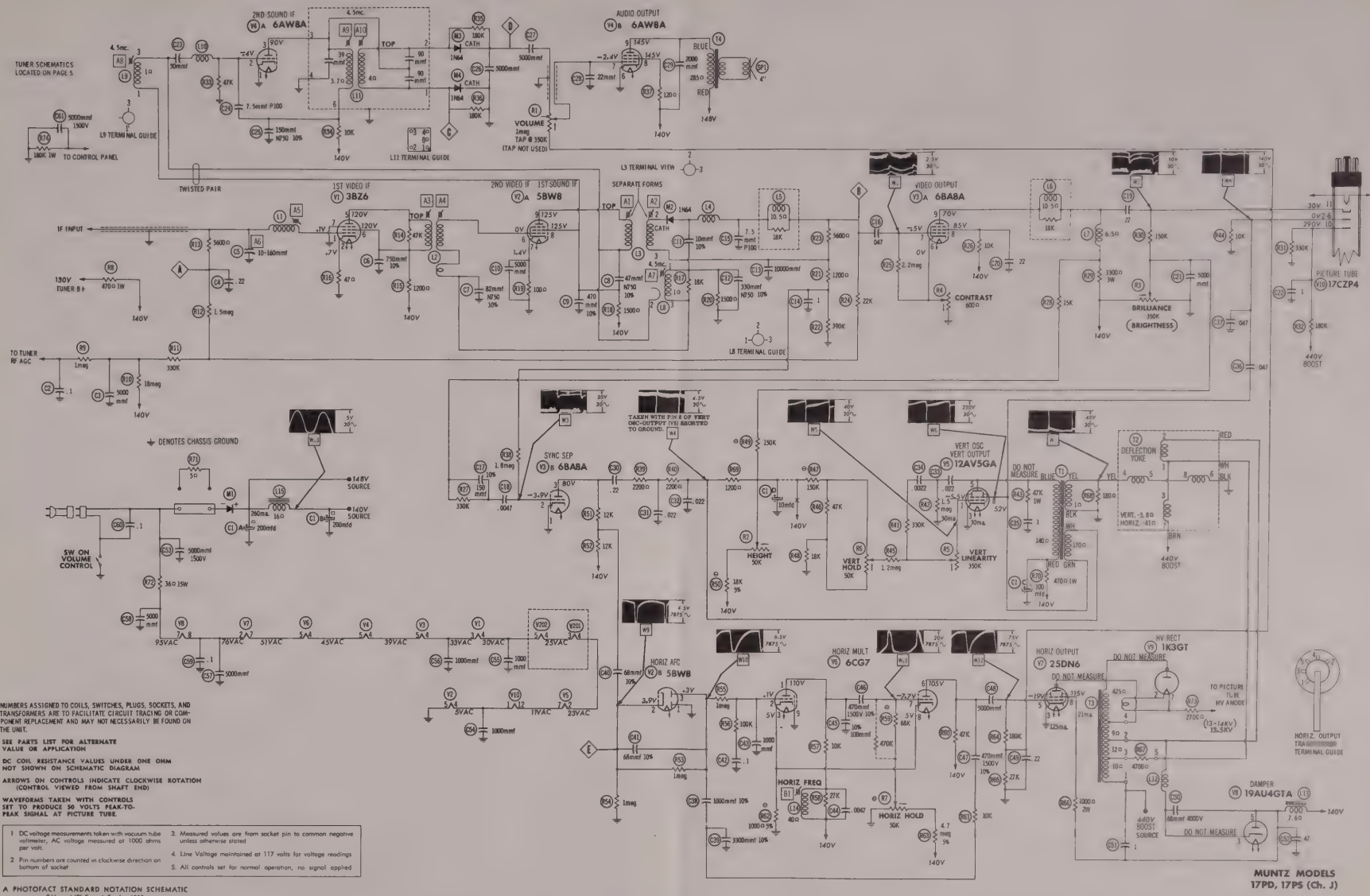
SET 442 FOLDER 2



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

1. DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket
3. Measured values are from socket pin to common negative unless otherwise stated
4. Line Voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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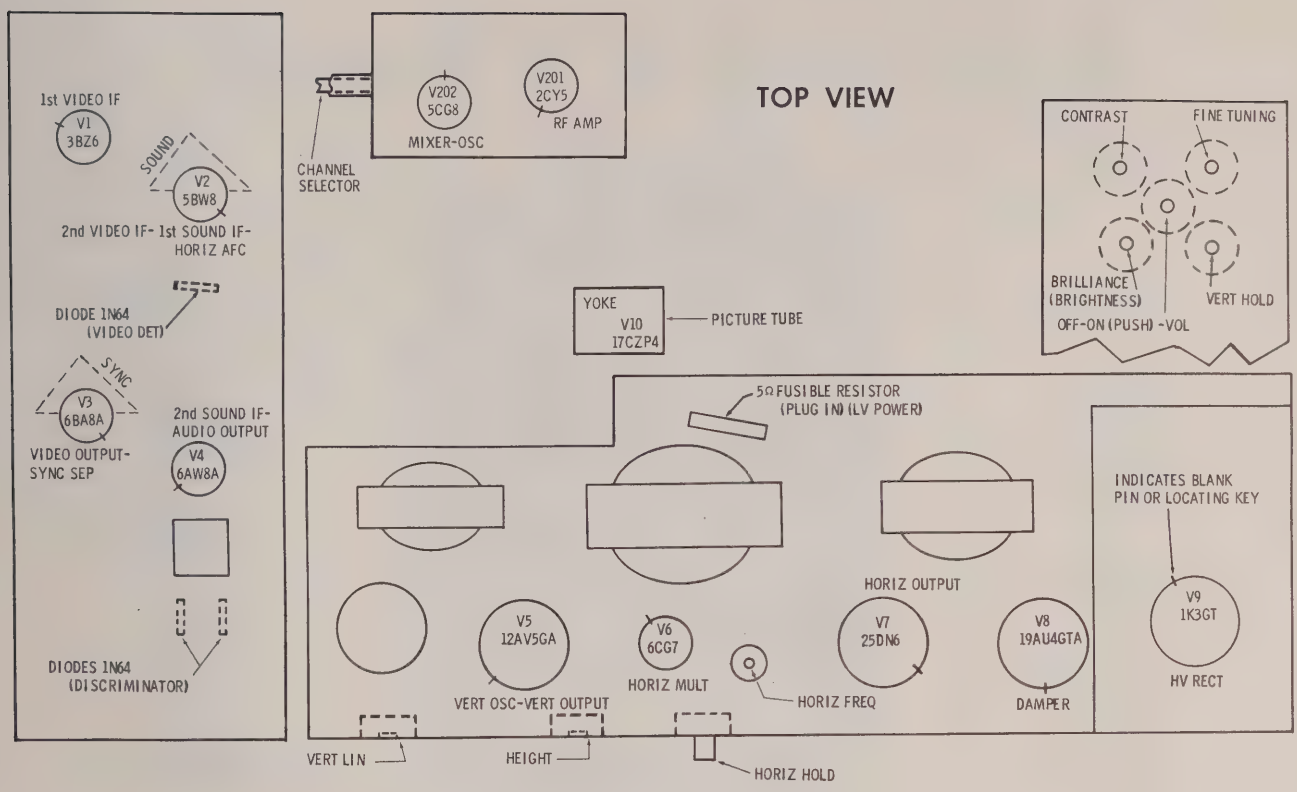
TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

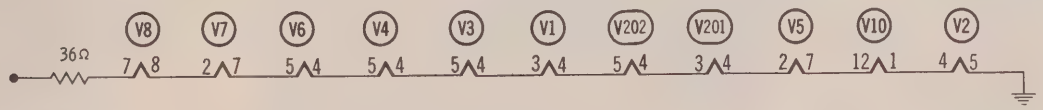
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor (5Ω), Rectifier(B+)

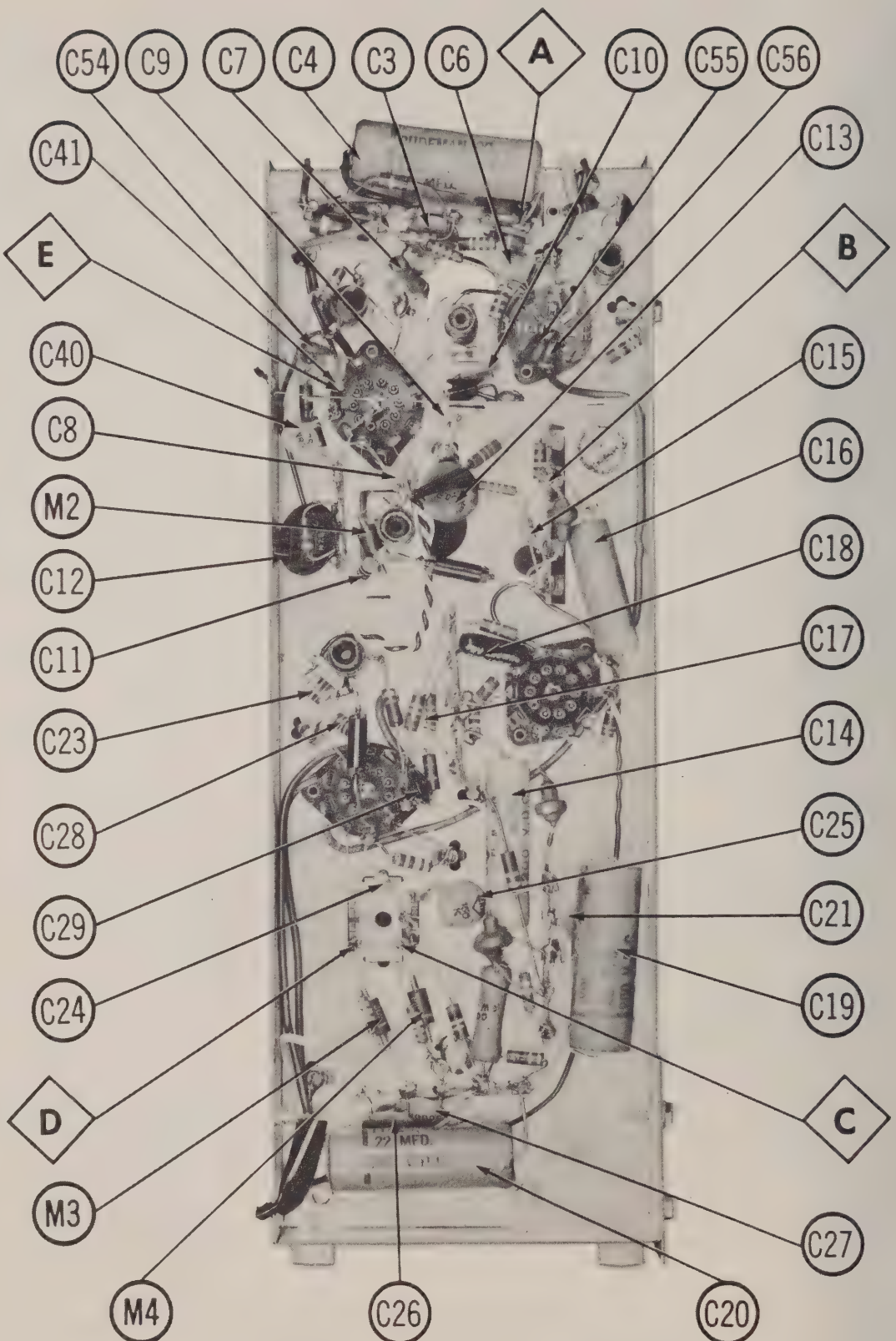
SWEEP FAILURE
No raster, has sound V2, V6, V7, V8, V9, V10, Rectifier (B+)
No vertical deflection V5
Poor vert. linearity or foldover V5
Poor horiz. linearity or foldover V6, V7, V8
Narrow picture V6, V7, V8, Rectifier (B+)
Vert. off freq. V5
Horiz. off freq. V6

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (Video Det)
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3, V10
Has pic, no sound V2, V4, Diodes (Discriminator)

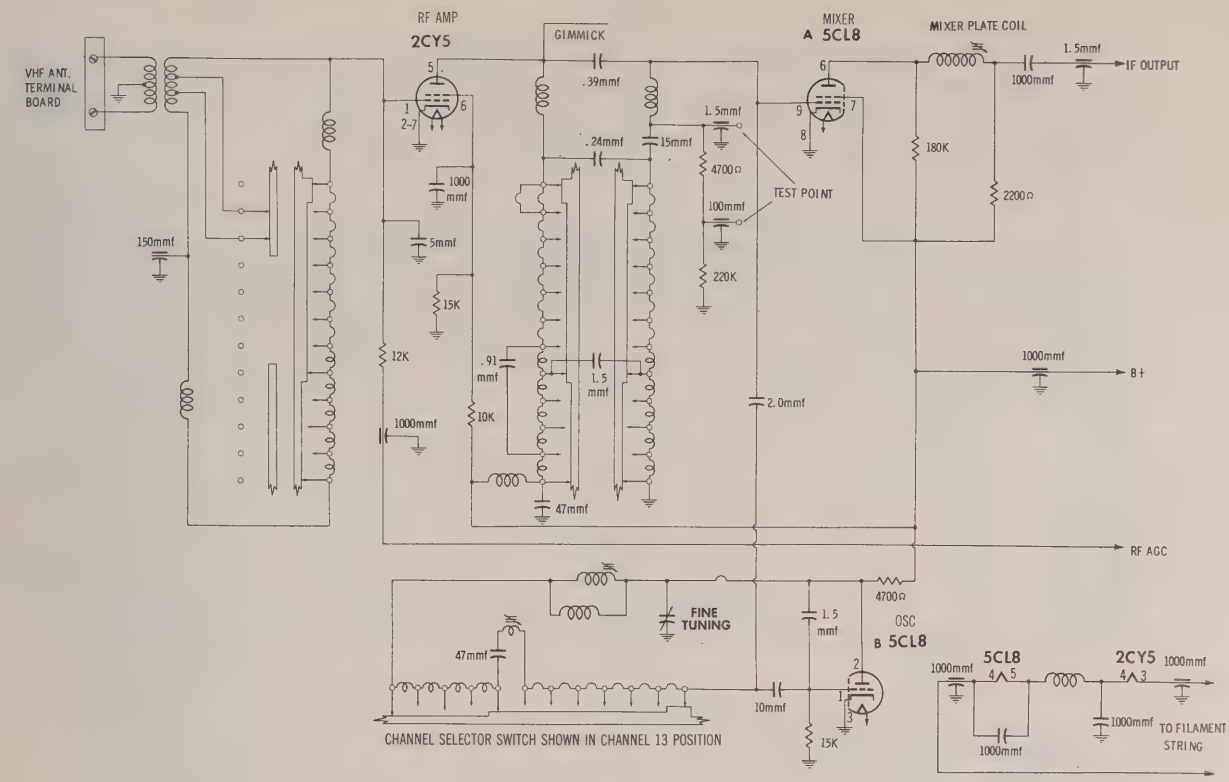
SYNC FAILURE
No vert. sync V3
No horiz. sync V3, V2
No vert. or horiz. sync V3

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)





VERTICAL CHASSIS - CAPACITOR & ALIGNMENT IDENTIFICATION



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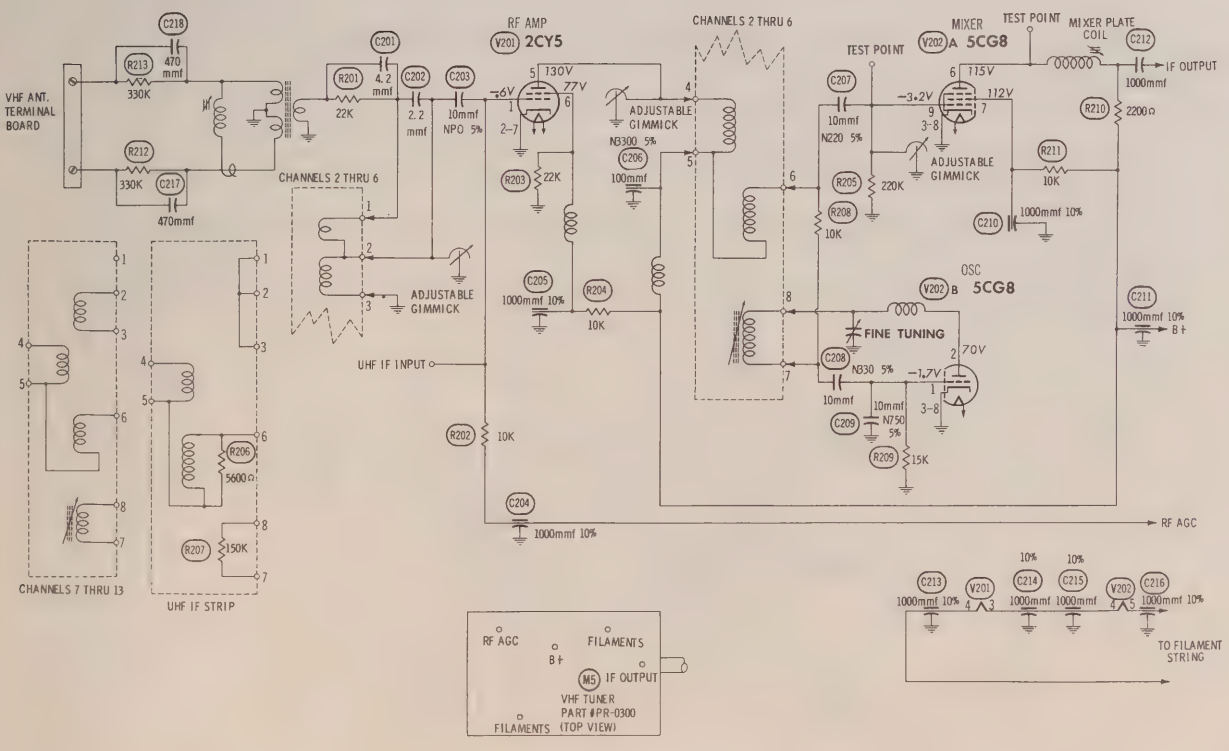
VHF TUNER PR-0293



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VHF TUNER PR-0300

TUNER PARTS LIST AND DESCRIPTIONS

PR-0300

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.		

ITEM No.	USE	TYPE	NOTES
V202	Mixer-Osc.		

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	MUNTZ PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	4.2								5TCCB-V42S*	
C202	2.2					TCZ-2R2	C10V22C	CNO-522	5TCCB-V22	
C203	10		NPO 5%			DTZ-10	C10Q1C	CNO-410	5TCC-Q1	
C204	1000		10%		EF-001	MFT-1000			503C-D1	
C205	1000		10%		EF-001	MFT-1000			503C-D1	
C206	100		N3300 5%							
C207	10		N220 5%							
C208	10		N330 5%			TCA-10				
C209	10		N750 5%			TCN-10	C10Q1U	CN7-410	5TCU-Q1	
C210	1000		10%		EF-001	MFT-1000			503C-D1	
C211	1000		10%		EF-001	MFT-1000			503C-D1	
C212	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C213	1000		10%		EF-001	MFT-1000			503C-D1	
C214	1000		10%		EF-001	MFT-1000			503C-D1	
C215	1000		10%		EF-001	MFT-1000			503C-D1	
C216	1000		10%		EF-001	MFT-1000			503C-D1	
C217	470				BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C218	470				BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		MUNTZ PART No.	NOTES
	OHMS	WATT		
R201	22K			
R202	10K			
R203	22K			
R204	10K			
R205	220K			
R206	5600Ω			
R207	150K			

ITEM No.	RATING		MUNTZ PART No.	NOTES
	OHMS	WATT		
R208	10K			
R209	15K			
R210	2200Ω			
R211	10K			
R212	330K			
R213	330K			

TUNER ALIGNMENT INSTRUCTIONS

VHF OSCILLATOR ALIGNMENT

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987
WALSCO #2531

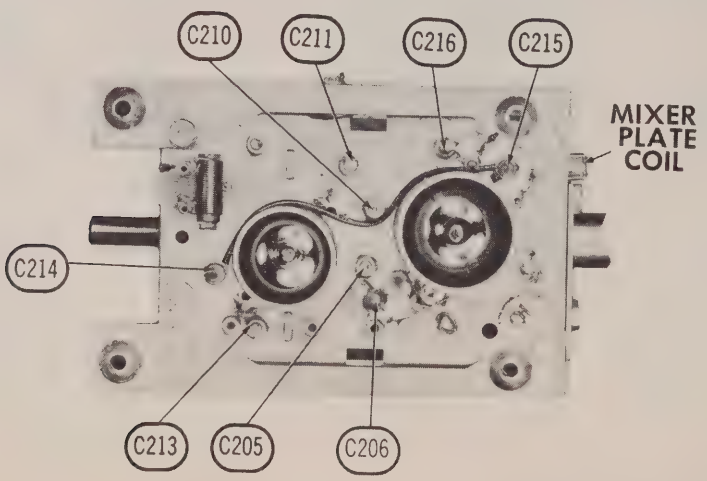
The individual channel adjustment screws are accessible one at a time, thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning to the center of its range and switch to channel to be adjusted and adjust for best picture and sound.

VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



TUNER PR-0300 TOP VIEW

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested alignment tools: A1 thru A5, A7 thru A10.. GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A6..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

VIDEO IF ALIGNMENT

Connect the negative lead of a 5.5 volt bias supply to point Ⓐ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001mfd.	High side to pin 6 (grid) of 2nd Video IF. Low side to chassis.	44MC (10MC Swp)	41.25MC 42.5MC 43.0MC 44.75MC 45.75MC 47.25MC	Any non-interfering channel.	Vert. amp. thru 10K to point Ⓑ. Low side to chassis. (Across Video Det. load.)	A1, A2	Adjust for maximum response similar to Fig. 1 peaking at approximately 44.25MC.
2.	"	High side to pin 1 (grid) of 1st Video IF. Low side to chassis.	"	"	"	"	A3, A4	Adjust for response similar to Fig. 2.
3.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	"	"	"	"	A5	"
4.	"	"	"	"	"	"	A6 and Mixer Plate Coil	Adjust A6 for maximum response similar to Fig. 3. Adjust Mixer Plate Coil to control steepness of low frequency side of response curve. If necessary, retouch A5 to obtain desired response.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.01mfd.	High side to point Ⓑ. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel.	DC probe thru 10K to point Ⓒ. Common to chassis.	A7, A8, A9	Adjust for maximum deflection.
6.	"	"	"	"	DC probe thru 10K to point Ⓓ. Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

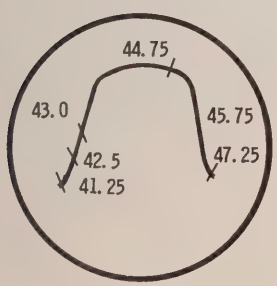


FIG.1

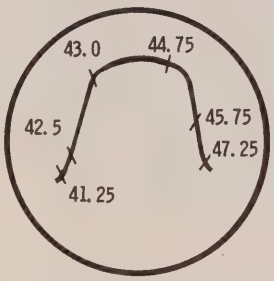


FIG.2

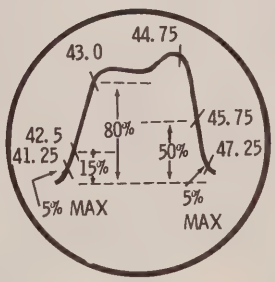


FIG.3

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	1st Video IF Amp.	3BZ6	
V2	2nd Video IF Amp. - 1st Sound IF-Horiz. AFC	5BW8	
V3	Video Output-Sync Sep.	6BA8A	
V4	2nd Sound IF Amp. - Audio Output	6AW8A	
V5	Vert. Osc.-Vert. Output	12AV5GA	
V6	Horiz. Mult.	6CG7	
V7	Horiz. Output	25DN6	
V8	Damper	19AU4GTA	
V9	HV Rectifier	1X2GT	

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	MUNTZ PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V10	17CZP4				

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MUNTZ PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	▲200	150	CE-0042	AFH24-38-95	D3338	FP41L 8			
B	▲200	150							
C	▲100	150							
D	10	75							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		TOL	REPLACEMENT DATA						NOTES
	CAP.	VOLT		MUNTZ PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No	SPRAGUE PART No.	
C2	.1	200			P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C3	5000			CC-0060	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C4	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C5	10-150									
C6	750		10%	CC-0224	DI-750		IR5T75	JL-375	5GA-T75S 10% *	
C7	82		N750 10%	CC-0187	N750-DI 82	TCN-82	C10Q82U	CN7-482		
C8	47		N750 10%	CC-0156	N750-DI 47	DTN-47	C10Q47U	CN7-447	5TCU-Q47S 10% *	
C9	470		10%	CC-0158	DI-470	MD-471		JL-347	5GA-T47S 10% *	
C10	5000			CC-0060	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C11	10		10%	CC-0154	DI-10	DS-100	L10Q1	ZT-541	5GA-Q1	
C12	330		N750 10%	CC-0160	N750-DI330	DTN-330	C10T33U	CN7-333	5TCC-T33S 10% *	
C13	10000			CC-0167	BPD-01	DD-103	BYA10B1	B-110	2TM-S1	
C14	.1	200			P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C15	7.5		P100	CC-0153						
C16	.047	200			P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C17	150		10%	CC-0222	DI-150	DD-151	L10T15	JL-315	5GA-T15S 10% *	
C18	.0047	600			P688N-0047	DS-472	CUB6D47	GEM-6247	6TM-D47	
C19	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C20	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C21	5000			CC-0060	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C22	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C23	50			CC-0214	HI 50	DS-500	L10Q5	UC-845	5GA-Q5S 10% *	
C24	7.5		P100	CC-0153						
C25	150		N750 10%	CC-0158	N750-DI 150	DTN-150	C10T15U	CN7-315	5TCU-T15S 10% *	
C26	5000			CC-0165	BPD-005	DD-502	BYA10D6	B-250	5HK-D6	
C27	5000			CC-0165	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C28	22			CC-0155	SI 22	DS-220	L20Q22	UC-5422	5GA-Q22	
C29	2000			CC-0180	BPD-002	DD-202	BYA10D2	B-230	5HK-D2	
C30	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C31	.022	200			P288N-022		CUB4S22	GEM-4122	2TM-S22	
C32	.022	200			P288N-022		CUB4S22	GEM-4122	2TM-S22	
C33	.022	200			P288N-022		CUB4S22	GEM-4122	2TM-S22	
C34	.0022	600			P688N-0022	DS-222	CUB6D22	GEM-6222	6TM-D22	
C35	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C36	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C37	.047	200			P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C38	1000		10%	CC-0194	DI-1000		PM6D1	JL-210	5GA-D1S 10% *	
C39	3300		10%	CC-0236	DI-3300		PM6D33	JL-333	5GA-D33S 10% *	
C40	68		10%	CC-0146	DI-68	DD-680	L10Q68	CNO-468	5GA-Q68S 10% *	
C41	68		10%	CC-0146	DI-68	DD-680	L10Q68	CNO-468	5GA-Q68S 10% *	
C42	.1	200			P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C43	1000			CC-0117	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C44	.0047	600			P688N-0047	DS-472	CUB6D47	GEM-6247	6TM-D47	
C45	100		10%	CC-0163	DI-100	DD-101	2SR5T1	ZT-531	5GA-T1S 10% *	
C46	470	1500	10%	CC-0135						
C47	470	1500	10%	CC-0135						
C48	5000			CC-0060	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C49	.22	400			P488N-22		CUB4P22	GEM-4022	4TM-P22	
C50	68	4000		CC-0137	HVD-80-[illegible]	DD60-680		5DY-468		
C51	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C52	.47	200			P288N-47		CUB2P47	GEM-2047	2TM-P47	
C53	5000	1500		CC-0133		DD30-502	HVC20D5	GEM-1625	20HK-D5	
C54	1000			CC-0117	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C55	1000			CC-0117	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C56	1000			CC-0117	BPD-001	DD-102	BYA10DM	B-210	5HK-DI	
C57	5000			CC-0165	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C58	5000			CC-0165	BPD-005	DD-502	BYA10D6	B-250	5HK-D5	
C59	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C60	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C61	5000	1500		CC-0133		DD30-502	HVC20D5	GEM-1625	20HK-D5	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MUNTZ PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1meg	½	VC-0069				FP16L	Volume, Tap ② 350K
B	Switch						Not Req.	Push-Push Off-On

CONTROLS (cont)

ITEM No	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MUNTZ PART No.	CENTRALAB PART No.	CLAROSTAT PART No	IRC PART No	MALLORY PART No	
R2A	50K	½	VC-0067	AB-31	B47-50K-S	QII-123	PTA54L	Vert. Hold
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R3A	350K	½	VC-0068	AB-59	B47-500K-S	QII-132	PTA55L	Brilliance (Brightness)
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R4A	500Ω	½	VC-0064	AB-4	B47-500-S	QII-103	PTA52L	Contrast
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R5A	350K	½	VC-0065	AB-59	B47-500K-S	QII-132	PTA55L	Vert. Lin.
B	Shaft			AK-19	Not Req.	TQ	Not Req.	
R6A	50K	½	VC-0068	BX-31	B47-50K-S	QII-123	PTA54L	Height
B	Shaft			Not Req.	Not Req.	TQ	Not Req.	
R7A	50K	½	VC-0067	AB-31	B47-50K-S	QII-123	PTA54L	Horiz. Hold, Note 1
B	Shaft			AK-19	Not Req.	TQ	Not Req.	

Note 1. Some versions may use 50K in this application (Part #VC-0062-1).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		MUNTZ PART No.	NOTES
	OHMS	WATTS		
R8	470Ω	1W	RC-470-11	
R9	1meg		RC-1004-18	
R10	18meg		RC-1805-18	
R11	330K		RC-3303-18	
R12	1.5meg		RC-1504-18	
R13	5600Ω		RC-5601-18	
R14	47K		RC-4702-18	
R15	1200Ω		RC-1201-18	
R16	47Ω		RC-047-18	
R17	18K		RC-1802-18	
R18	1500Ω		RC-1501-18	
R19	100Ω		RC-100-18	
R20	1500Ω		RC-1501-18	
R21	1200Ω		RC-1201-18	
R22	390K		RC-3903-18	
R23	5600Ω		RC-5601-18	
R24	22K		RC-2202-18	
R25	2.2meg		RC-2204-18	Note 4
R26	10K		RC-1002-18	
R27	330K		RC-3303-18	
R28	15K		RC-1503-18	Note 5
R29	3300Ω	3W	RG-3301-13	
R30	150K		RC-1503-18	
R31	330K		RC-3303-18	
R32	180K		RC-1803-18	
R33	47K		RC-4702-18	
R34	10K		RC-1002-18	
R35	180K		RC-1803-18	
R36	180K		RC-1803-18	
R37	120Ω		RC-120-18	
R38	1.8meg		RC-1804-18	
R39	2200Ω		RC-2201-18	
R40	2200Ω		RC-2201-18	
R41	330K		RC-3303-18	

ITEM No.	RATING		MUNTZ PART No.	NOTES
	OHMS	WATTS		
R42	1.5meg		RC-1504-18	
R43	47K	1W	RC-4702-11	
R44	10K		RC-1002-18	
R45	1.2meg		RC-1204-18	
R46	47K		RC-4702-18	
R47	150K		RC-1503-18	Note 1
R48	18K		RC-1802-18	
R49	150K		RC-1503-18	Note 2
R50	18K 5%		RC-1802-18	Note 3
R51	12K		RC-1202-18	
R52	12K		RC-1202-18	
R53	1meg		RC-1004-18	
R54	1meg		RC-1004-18	
R55	1meg		RC-1004-18	
R56	100K		RC-1003-18	
R57	10K		RC-1002-18	
R58	27K		RC-2702-18	
R59	68K		RC-6802-18	Note 4
R60	47K		RC-4702-18	
R61	10K		RC-1002-18	
R62	1000Ω 5%		RC-1001-18	Note 5
R63	4.7meg 5%		RC-4704-18	
R64	180K		RC-1803-18	
R65	27K		RC-2702-18	
R66	1000Ω	2W	RC-1001-12	
R67	4700Ω		RC-4701-18	
R68	180Ω		RC-180-18	
R69	1200Ω		RC-1201-18	
R70	470Ω	1W	RC-470-11	
R71	5Ω		RW-005-13	
R72	360	15W	RW-0048	
R73	2700Ω		RC-2701-18	
R74	180K	1W	RC-1803-11	

Note 1. Some versions may use 27K in this application (Part #RC-2702-18).
Note 2. Some versions may use 270K in this application (Part #RC-2703-18).
Note 3. Some versions may use 10K in this application (Part #RC-1003-18).
Note 4. Some versions may use 82K in this application (Part #RC-8202-18).
Note 5. Some versions may use 13000-5% in this application (Part #RC-1301-18).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MUNTZ PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	1st Video IF Trans.	LC-0102		TV-131		VF-4	
L2	2nd Video IF Trans.	LC-0103					
L3	3rd Video IF Trans.	LC-0104					
L4	RF Choke	LC-0091					4.7 Microhenries
L5	Series Peaking Coil	LC-0101-2	19-3250 ▲	TV-185 ▲	6130 ▲	VP-5 ▲	270 Microhenries, wound on 1K resistor
L6	Series Peaking Coil	LC-0101-1	19-3250 ▲	TV-185 ▲	6130 ▲	VP-5 ▲	270 Microhenries, wound on 1K resistor
L7	Shunt Peaking Coil	LC-0101-1	19-3125	TV-195	6153	VP-4	120 Microhenries
L8	1st Sound IF	LC-0105					
L9	2nd Sound IF	LC-0105					
L10	RF Choke	LC-0091		SW-631			4.7 Microhenries
L11	Discriminator	LC-0076					
L12	Resonant Choke	LC-0098					10 Microhenries
L13	RF Choke	LC-0097					2 Millihenries

▲ Parallel with 18K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MUNTZ PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No	
L14	40Ω		LO-0077		TV-163*	6210 *	H-102 *	HS-5*	Horiz. Freq. * Enlarge mtg. hole.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~/.)	MUNTZ PART No	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No
L15	.370A	16Ω	.7 Hy.	LC-0100-2	C5041		F-801	C-2328	28C92	C-40X

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		MUNTZ PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No
T1	Vert. Osc. & Output	TO-0051-1		A-3881				36R20	
T2	Yoke-Horiz (24MH) (90°) Vert. (4.3MH)	LC-0085-2	DF809 ① ③	MDF-98 ②				Y-44 ②	Y-48 ① ②
	Rear Cover & Centering Device	[illegible]							YC-1 ②
	Yoke Clamp	[illegible]							CL-1
T3	Horiz. Output	TO-0054							D-95 ① *

① Connect yoke terminal #3 to terminal #3 of T3, yoke terminals #2 and #7 to R67, yoke terminal #1 to terminal #1 of T3.
② Use original rear cover and centering device.
③ Drill new mounting hole(s).

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
4							5
2							4
3							YCT
1							1

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	MUNTZ PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	
T4	8000Ω	3-4Ω	TO-0049-2	ZJ007	A-3019	AU-804	A-8092	26S49	S-5Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP	MUNTZ PART No.	QUAM PART No.	
SP1	4"	PM	3.2Ω	SK-0022-3	4A15	

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	MUNTZ PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.		
M1	.260A		HA504 ⊥	SD-500 ⊥	40K ⊥	⊥ Silicon Type.	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		MUNTZ PART No.	CBS PART No.	SYLVANIA PART No	
M2	1N64		1N64	1N60	Video Detector (Pigtail)
M3	1N64		1N64	1N60	Sound Discriminator (Pigtail)
M4	1N64		1N64	1N60	Sound Discriminator (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MUNTZ PART No.	NOTES
M5	Tuner	PR-0300	VHF
	Tuner	PR-0293	VHF
	Switch	SW-0030	Local-Distant, EPDT (Slide Type) Model 17PD
	Antenna	PR-0299	Telescopic, Model 17PD

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

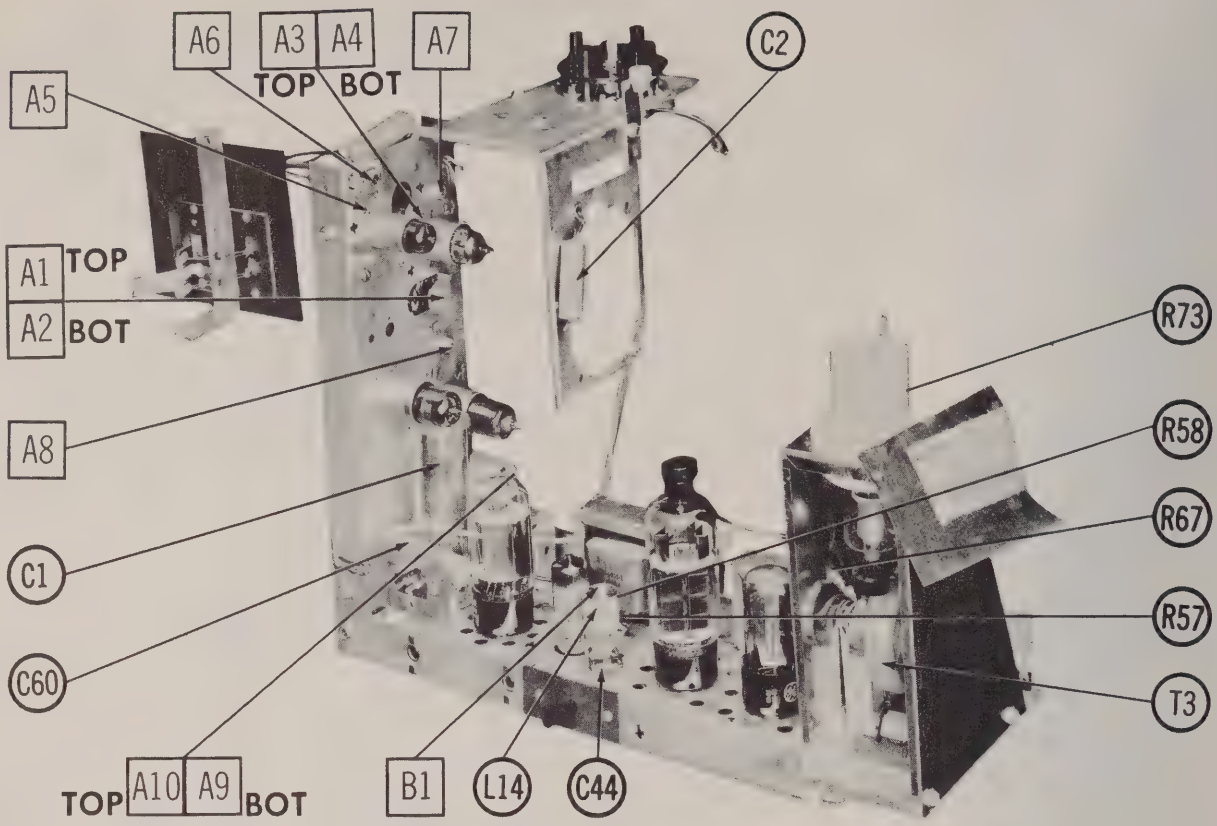
NAME	PART NO.	DESCRIPTION
Safety Glass	WG-0027	Model 17PB
Safety Glass	WG-0027-1	Model 17PD
Knob	GE-0018-1	Channel Selector
Knob	KB-0079	Fine Tuning, Contrast
Knob	KB-0079-2	Volume-Off-On
Knob	KB-0079-3	Vert. Hold, Brilliance
Cabinet	MC-0104	Model 17PB
Cabinet	MC-0104-1	Model 17PD
Handle	HA-0102	Model 17PB
Handle	HA-0103	Model 17PD

WIRING DATA

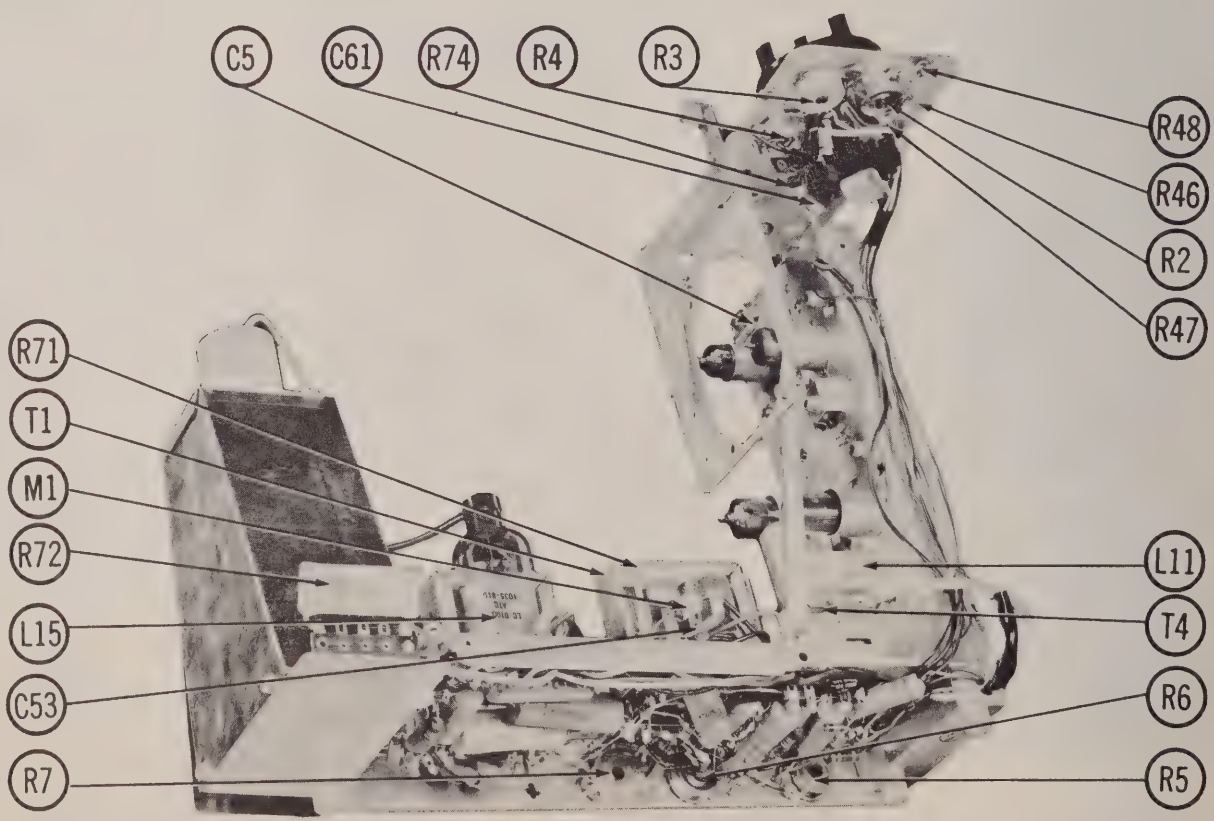
High Voltage Lead	Use BELDEN No. [illegible]
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. [illegible]
300Ω Tuner Input Lead	Use BELDEN No. 8248
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

MUNTZ MODELS 17PD, 17PS (Ch. J)

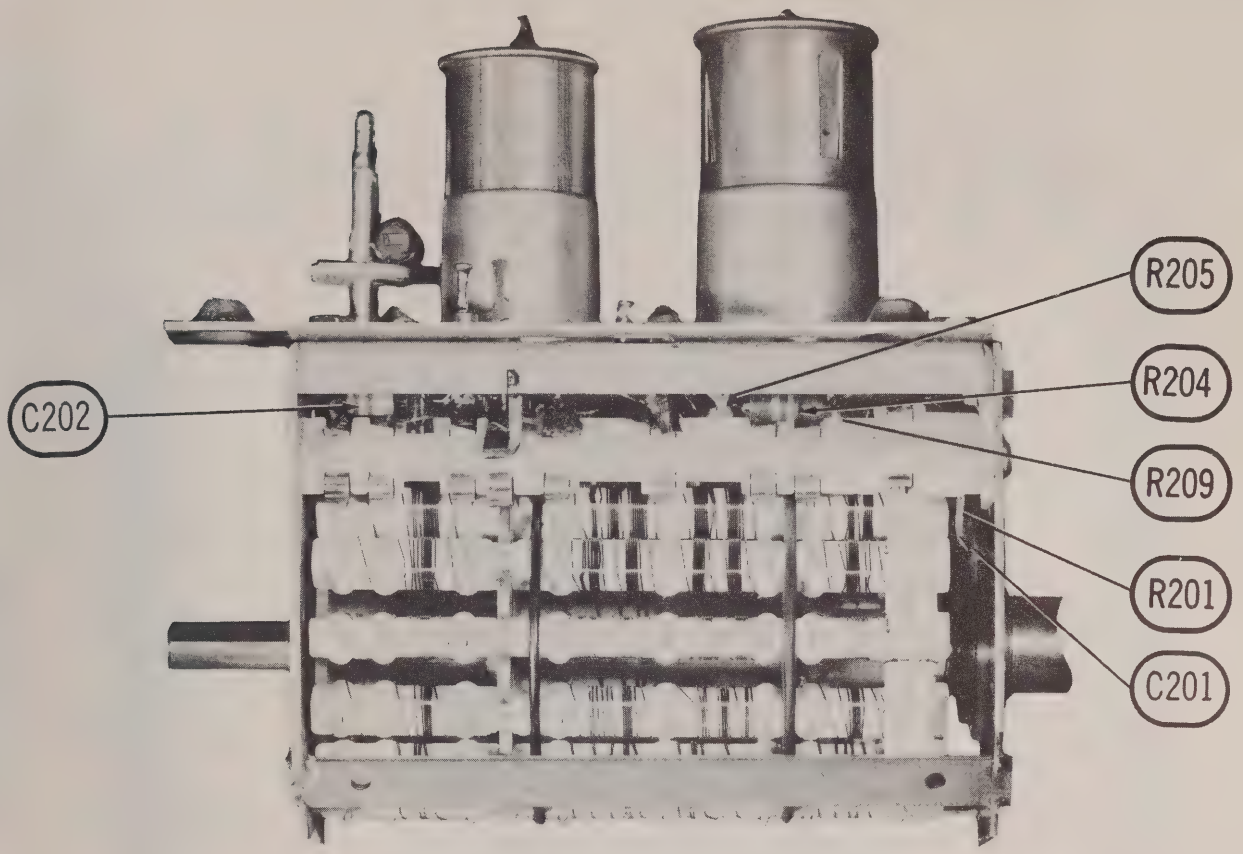
FOLDER 2



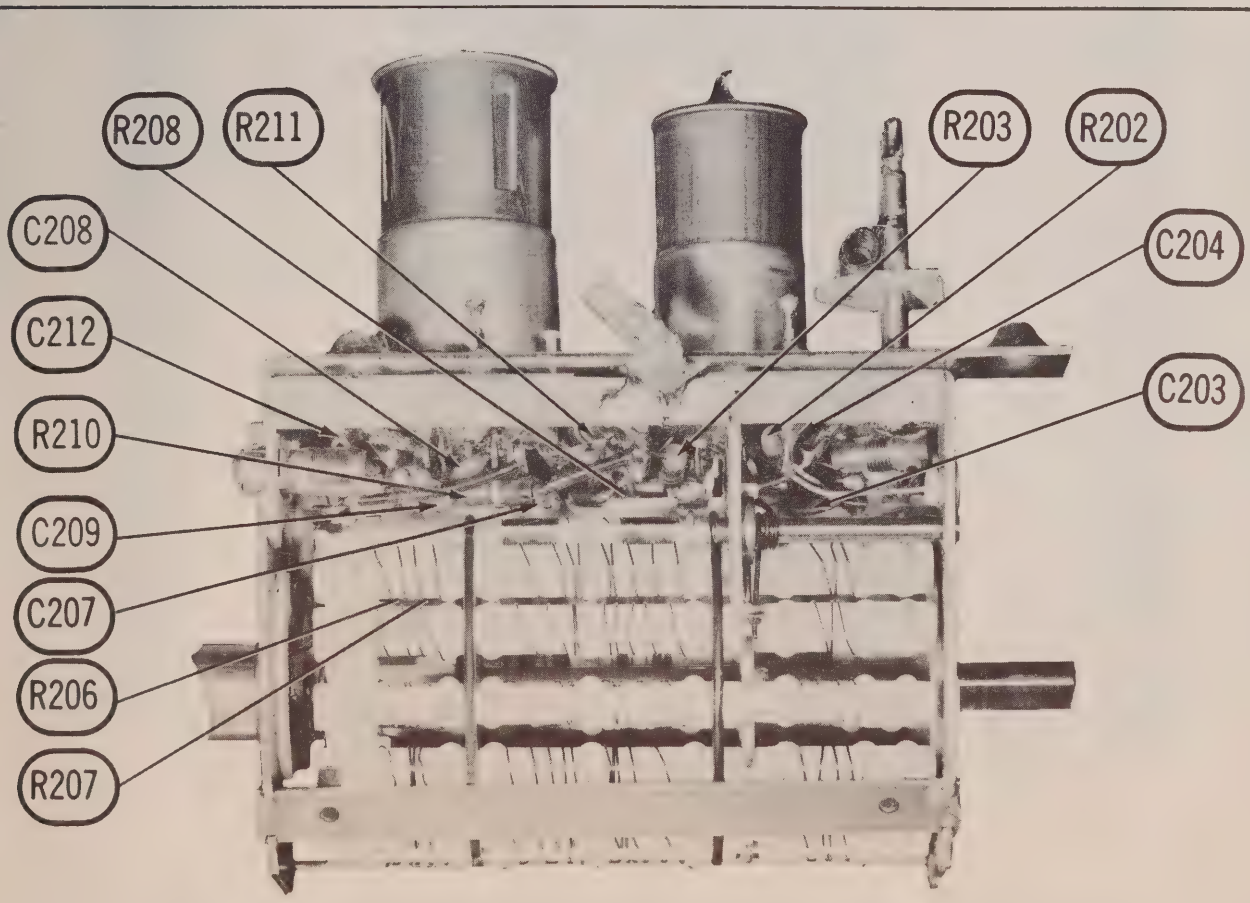
CHASSIS REAR VIEW



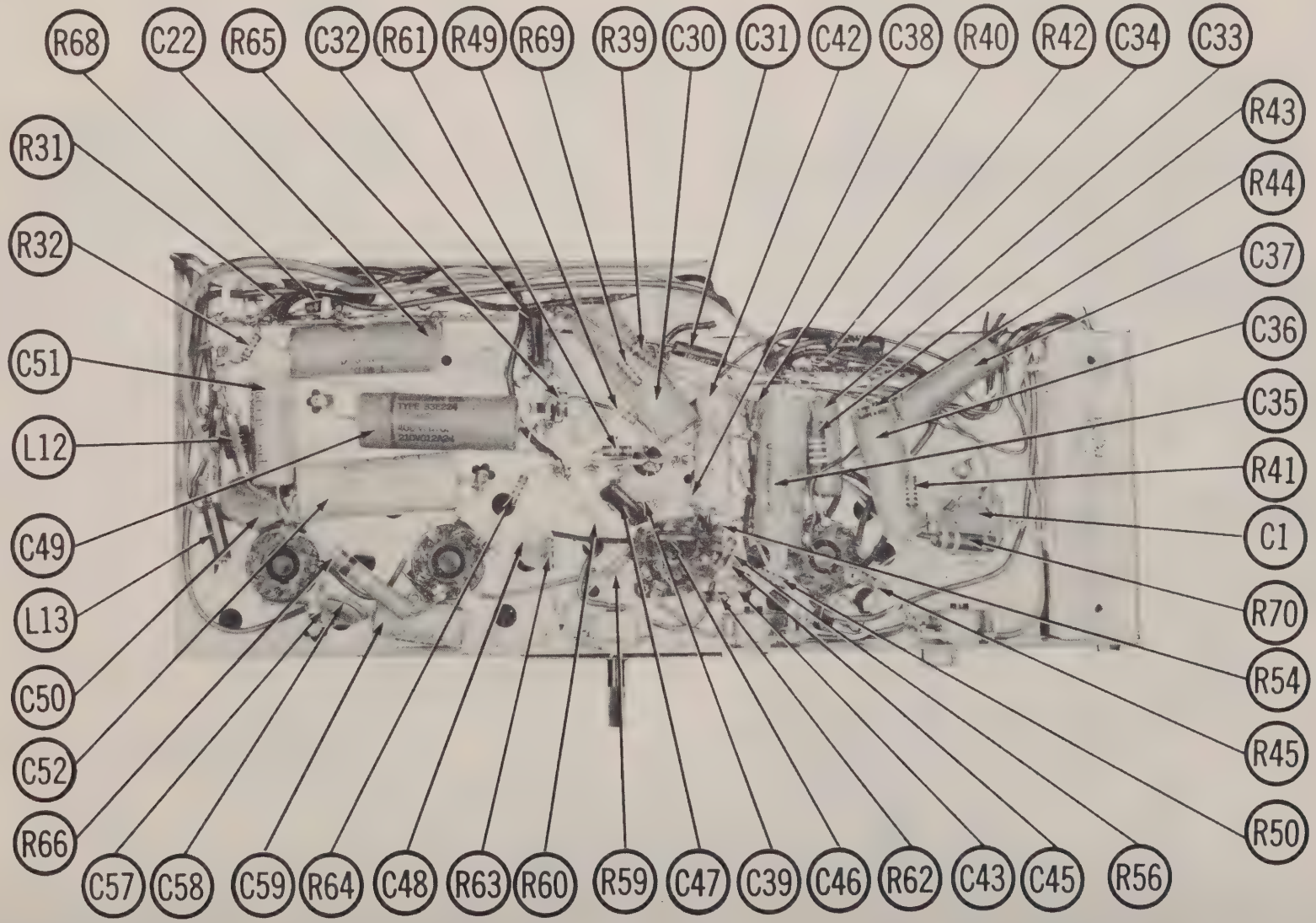
CHASSIS - FRONT VIEW



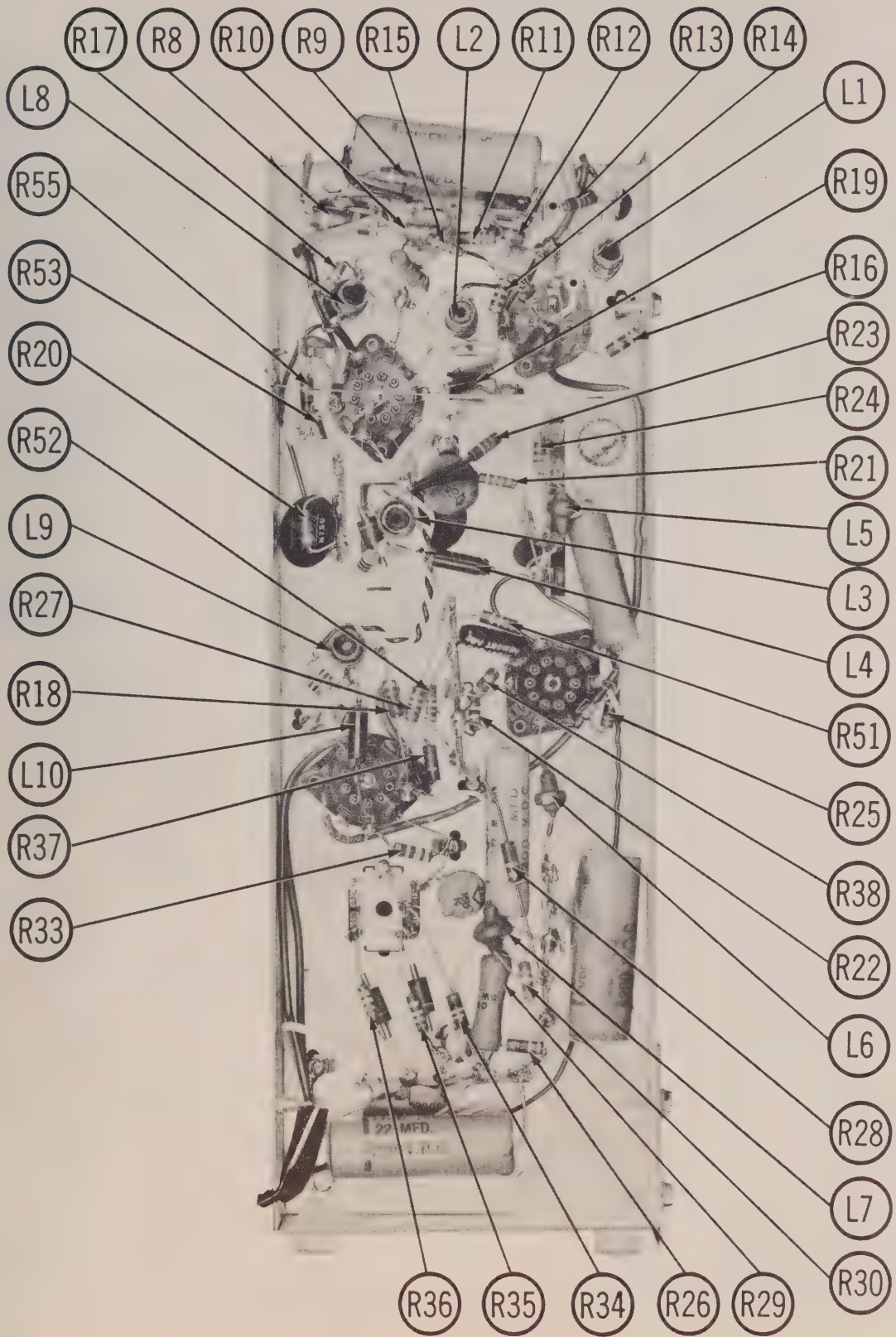
TUNER PR-0300 - LEFT SIDE



TUNER PR-0300 - RIGHT SIDE



HORIZONTAL CHASSIS - BOTTOM VIEW

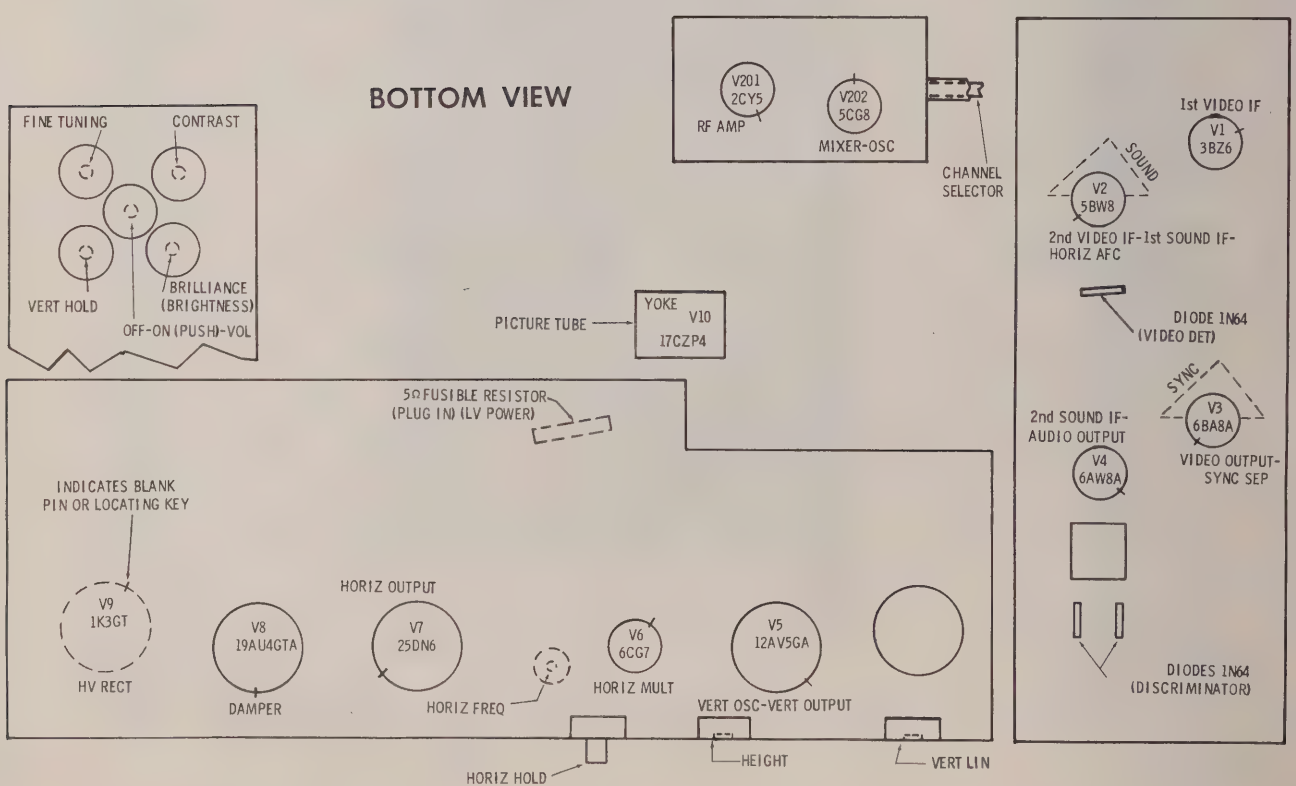


VERTICAL CHASSIS - RESISTOR, INDUCTOR IDENTIFICATION

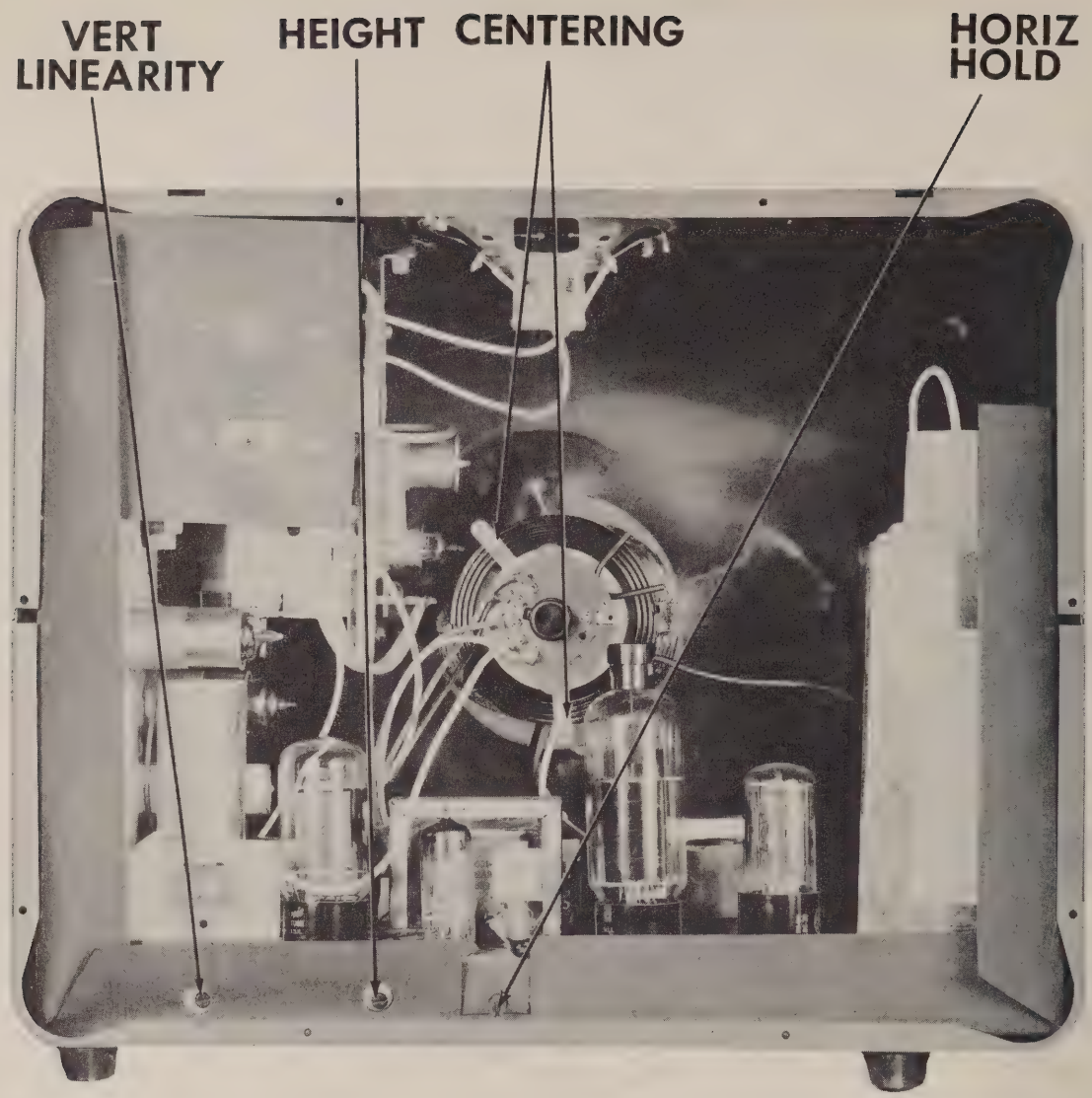
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	1.9meg	47Ω	7.5Ω	7Ω	†1200Ω	†1200Ω	0Ω		
V2	5BW8	0Ω	1meg	2meg	1Ω	0Ω	1500Ω	100Ω	†1500Ω	†1500Ω
V3	6BA8A	0Ω	2.2meg	†24K	7.5Ω	9Ω	●50Ω	2.2meg	†10K	†3300Ω
V4	6AW8A	0Ω	47K	†10K	9Ω	10.5Ω	0Ω	27K	†120Ω	‡285Ω
V5	12AV5GA	●1.5meg	5.5Ω	0Ω	TP	†625Ω	NC	2.5Ω	†●50K	
V6	6CG7	†10K	3meg	1000Ω	10.5Ω	12Ω	†47K	● 120K	1000Ω	0Ω
V7	25DN6	NC	17Ω	0Ω	NC	200K	NC	12Ω	†1000Ω	TOP CAP ‡9Ω
V8	19AU4GTA	NC	NC	¶ 500K	NC	†8Ω	NC	22Ω	17Ω	
V9	1K3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡435Ω
V10	17CZP4	1Ω	10K	Pin 6 10K	Pin 10 ‡180K	Pin 11 ●180K	Pin 12 2.5Ω			
V201	2CY5	1.7meg	0Ω	6Ω	5.5Ω	†470Ω	†10K	0Ω		
V202	5CG8	15K	†10K	0Ω	6Ω	7Ω	†2700Ω	†10K	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 148V. SOURCE.
‡ MEASURED FROM PIN 3 OF V8.
NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools:
GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

Turn the set on and tune in a TV station, preferably with a test pattern. Allow the receiver a few minutes warm-up time.

Adjust controls for a normal picture.

Connect a clip lead across the Horizontal Frequency coil (L14).

Connect a clip lead from point Ⓔ to chassis.

Adjust the Horizontal Hold control (R7) until a single picture is attained.

Remove the short from L14. Adjust the Horizontal Frequency slug (B1) with the slug entering the coil from the chassis side until a single picture is attained, then turn B1 1/4 turn counterclockwise for final setting of the slug.

Remove the clip lead from point Ⓔ and the picture should snap into sync.

Turn the Horizontal Hold control fully clockwise, then turn slowly counterclockwise until the picture falls into sync. With this setting of the Horizontal Hold control, the picture should remain in sync regardless of the signal level.

PHOTOFACT* Folder
*TRADE MARK
EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

PRODUCTION CHANGE BULLETIN 219

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 1 IN SET 382

Motorola Chassis TS-542, TS-542Y were covered in PHOTOFACT Folder 1 - Set 382.

Late in production new models and late production changes were added.

Following is a complete list of all models and the chassis used in each.

MODEL	CHASSIS	MODEL	CHASSIS
21C8B	TS-542	Y21C8B	TS-542Y
21C8M	TS-542	Y21C8M	TS-542Y
21K70B	TS-542	Y21K70B	TS-542Y
21K70M	TS-542	Y21K70M	TS-542Y
21K79M	TS-542	Y21K79MA	TS-542Y
21K82B	TS-542	Y21K82B	TS-542Y
21K82M	TS-542	Y21K82M	TS-542Y
21K83B	TS-542	Y21K83B	TS-542Y
21K83M	TS-542	Y21K83M	TS-542Y
21K83W	TS-542	Y21K83W	TS-542Y
21T37B	TS-542	Y21T37B	TS-542Y
21T37M	TS-542	Y21T37M	TS-542Y
21T39B	TS-542	Y21T39B	TS-542Y
21T44B	TS-542	Y21T39BH	TS-542Y
21T44M	TS-542	Y21T44B	TS-542Y
21T45B	TS-542	Y21T44M	TS-542Y
21T46B	TS-542	Y21T46B	TS-542Y
21T46M	TS-542	Y21T46M	TS-542Y

MOTOROLA CHASSIS TS-542, TS-542Y

TS-542A-06 — IMPROVED AM REJECTION

L30 is changed to Part #24B741646.

C62 is omitted.

TS-542A-07 — COMPONENT CHANGES

R112, 6Ω Hot, 200Ω Cold, is changed to 6Ω Hot, 265Ω Cold.

TS-542A-09 — CIRCUIT CHANGES

V13 (Horiz. AFC) is omitted.

A Selenium Rectifier phase detector (Part #48B742698) is added, A partial schematic showing the new circuit is given in this bulletin.

R92 is decreased from 470K to 100K.

R93 is decreased from 470K to 100K.

C99 and C100 are increased from 220mmf to 10000mmf.

R95 is omitted.

Continued on Reverse Side

PRODUCTION CHANGE BULLETIN 219

PRODUCTION CHANGE BULLETIN 219

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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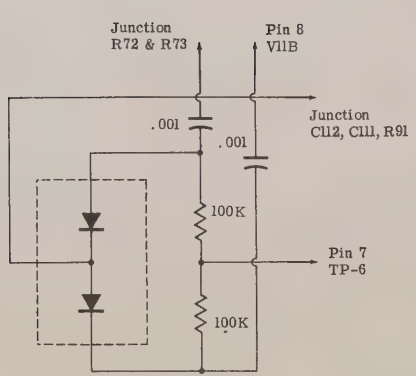
SET 442 FOLDER 3


Junction
R72 & R73
Pin 8
V11B
Junction
C112, C111, R91
.001
.001
100K
Pin 7
TP-6
100K

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 2 IN SET 405

DUMONT CHASSIS RA-500, RA-501

Dumont Chassis RA-400, RA-401 were covered in PHOTOFACT Folder 2 — Set 405.

Chassis RA-500, RA-501 are electrically identical to the models covered, except for the following changes.

COMPONENT CHANGES

R2 is omitted.

R16 is omitted.

C225 is omitted.

M201 is omitted.

C224 is omitted.

A .01 capacitor in series with an RF choke is connected from pin 2 of V202B to ground.

R52 was given in error as 100Ω ½W. The correct value is 100K ½W.

R57 is omitted.

R58 is decreased from 47K to 22K.

C37 is disconnected from pins 1 and 7 of V8 and reconnected to the end terminal of the bass control.

A 470mmf capacitor is added from the end terminal to the center terminal of the bass control. The center terminal of the bass control is connected to pins 1 and 7 of V8.

R5A (Tone control) is omitted.

A dual bass and treble control is added.

R6 (Vert. Hold control) is omitted.

R5B (Fringe Lock) is omitted.

A dual Fringe Lock and Vert.Hold control is added.

R62 is omitted.

C38 is omitted.

An electrostatic speaker is added.

A .01 capacitor is added in series with pin 5 of V8 and terminal 1 of speaker terminal board.

A 4700Ω, 1W resistor in series with a 150K, ½W resistor which is paralleled by a 2200mmf capacitor is added between the junction of terminal 1 of speaker terminal board and the .01 capacitor and B+ at the junction of R63 and red lead of T5.

R18 is decreased from 3300Ω to 2700Ω.

C11 is decreased from .15 to .047mfd.

R22 is increased from 22K to 39K.

R35 is increased from 330Ω to 620Ω.

R36 is decreased from 820Ω, 1W to 470Ω, ½W.

R94 is omitted.

A .3 Amp. fuse is added between B+ and junction of R11 (Horiz. Size control) and L20.

The TV-Phono switch has been moved from rear of chassis to position originally occupied by R6 (Vert. Hold control).

The Sound Muting Jack is omitted.

T1 (Power Transformer) Part #20011284 is changed to Part #20011283.

xxxxxCORRECTION NOTICExxxxx

WG-4029A, B, C, WG-4129A, B, WG-5019A, B, C, WG-5020A, B, WG-5119A, B, WG-5120A, B, C

Airline Models WG-4029A, B, C, WG-4129A, B, WG-5019A, B, C, WG-5020A, B, WG-5119A, B, WG-5120A, B, C were covered in Photofact Folder 3 - Set 367.

The following correction should be noted on pages 2 and 14 of Photofact Folder 3 - Set 367.

TEMPERATURE COEFFECIENT RESISTOR

The value and operating temperature for R76 was given in error.

R76 is 162Ω Cold and 20Ω Hot. The Part Number for this resistor is 43X329.

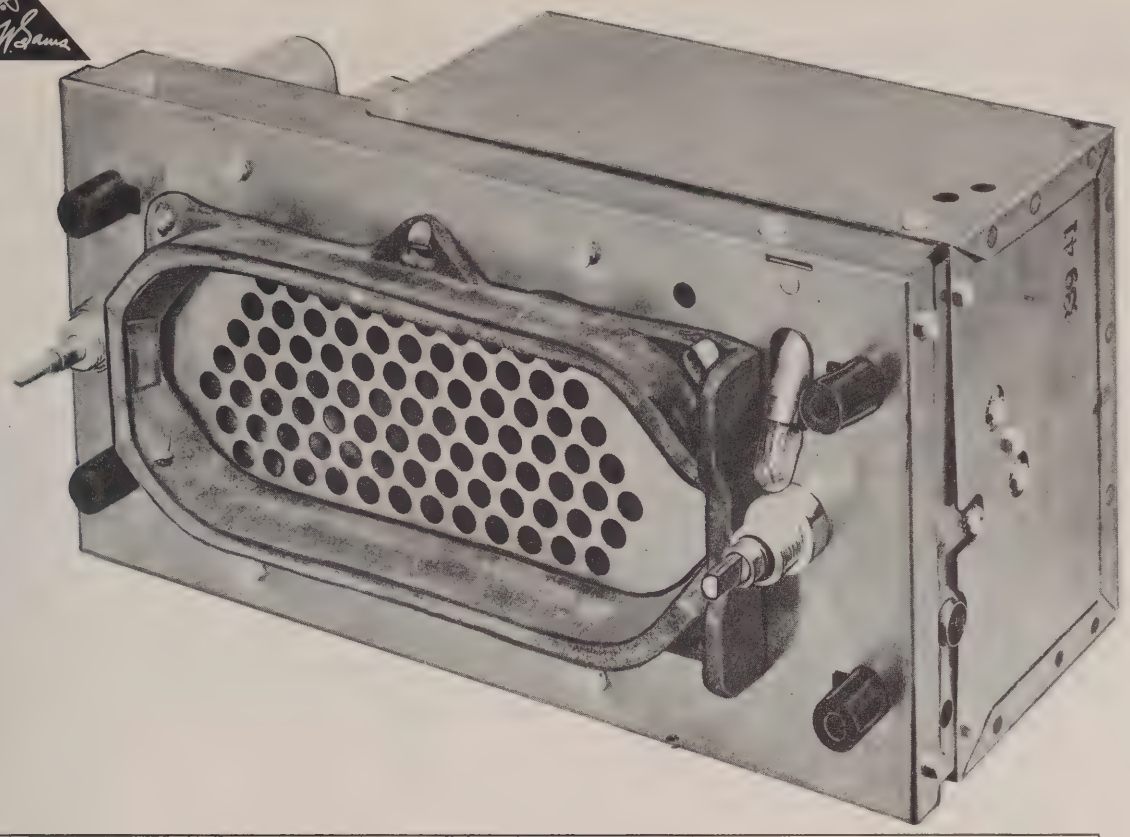
FOLDER 3

PHOTOFACT* Folder

EIA ELECTRONIC INDUSTRIES ASSOCIATION MEMBER

AMERICAN MOTORS
MODEL 8990582 (93MR)

AMERICAN MOTORS
MODEL 8990582 (93MR)



TRADE NAME	American Motors Model 8990582 (93MR) For 1959 Rambler Automobiles
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	Battery Operated 3 Tube Custom Built AM Automobile Receiver With Transistorized Output
POWER SUPPLY	12 Volt Storage Battery
RATING	.75 Amp. @12.6 Volts DC
TUNING RANGE—BROADCAST	540 - 1605KC

AMERICAN MOTORS
MODEL 8990582 (93MR)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:

A1 thru A4.....	GENERAL CEMENT #8606, 8606L, 8282, 9295 WALSCO #2526, 2543, 2544, 2545
A5 and A6.....	GENERAL CEMENT #8607, 9291 WALSCO #2520, 2522, 2523, 2524, 2537
A7.....	GENERAL CEMENT #5097, 8727 WALSCO #2515

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd.	High side to antenna receptacle. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4,	Adjust for maximum output.
2.	Fig. 1	Thru dummy to ant. receptacle.	1605KC	"	"	A5	"
3.	"	"	1400KC	Tune to 1400KC signal.	"	A6	"
4.	"	"	600KC	Tune to 600KC signal.	"	A7	Adjust for maximum output. Repeat steps 3 & 4.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A6 for maximum output.

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J40

SET 442 FOLDER 4

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12AD6	
V2	IF Amplifier	12BL6	
V3	Det. -AVC-AF Amp.	12AE6A	

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N573	Driver	2N155	2N176		2N176	PNP
X2	2N176	Output					PNP Note 1.

Note 1. When replacing, apply DC-4 grease (Motorola Part #11M490487) or equivalent to both sides of the insulator.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	■400	16	23B542329	AFH3-00-90		WP300.5		TVLS-3025*	
B	▲100	16							
C	100	16							

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	20-180			20K481527						
C3	.05	200		8R121005	P288N-05	DF-503	CUB2S5	GEM-215	2TM-S5	
C4	10000			21R121946	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C5	100		N750 10%	21R410036	N750-D1 100	DTN-101	C10T1U	CN7-310	5TCU-T1S 10%*	
C6	1000			21R128045	BPD-001	DD-102	BYA10D1M	B-102	5HK-D1	
C7	2000			21R121106	BPD-002	DD-202	BYA10D2	B-202	5HK-D2	
C8	10000			21R482726	BPD-01	DD-103	BYA10S1	B-103	5HK-S1	

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	4meg	½	18B560804	F1-82			† UE3817-S	Tone
B	1meg	½		R2-59				Volume, Tap ⓐ 300K
C	Switch			KB-4				
R2	210Ω	1(WW)	18K561991		39-200*		FL-150 *	Bias

† "STA-LOC" equivalent: FA46L, OS2125, RU16T35, IS2687, US41
* Use 40Ω resistor in series with terminal.

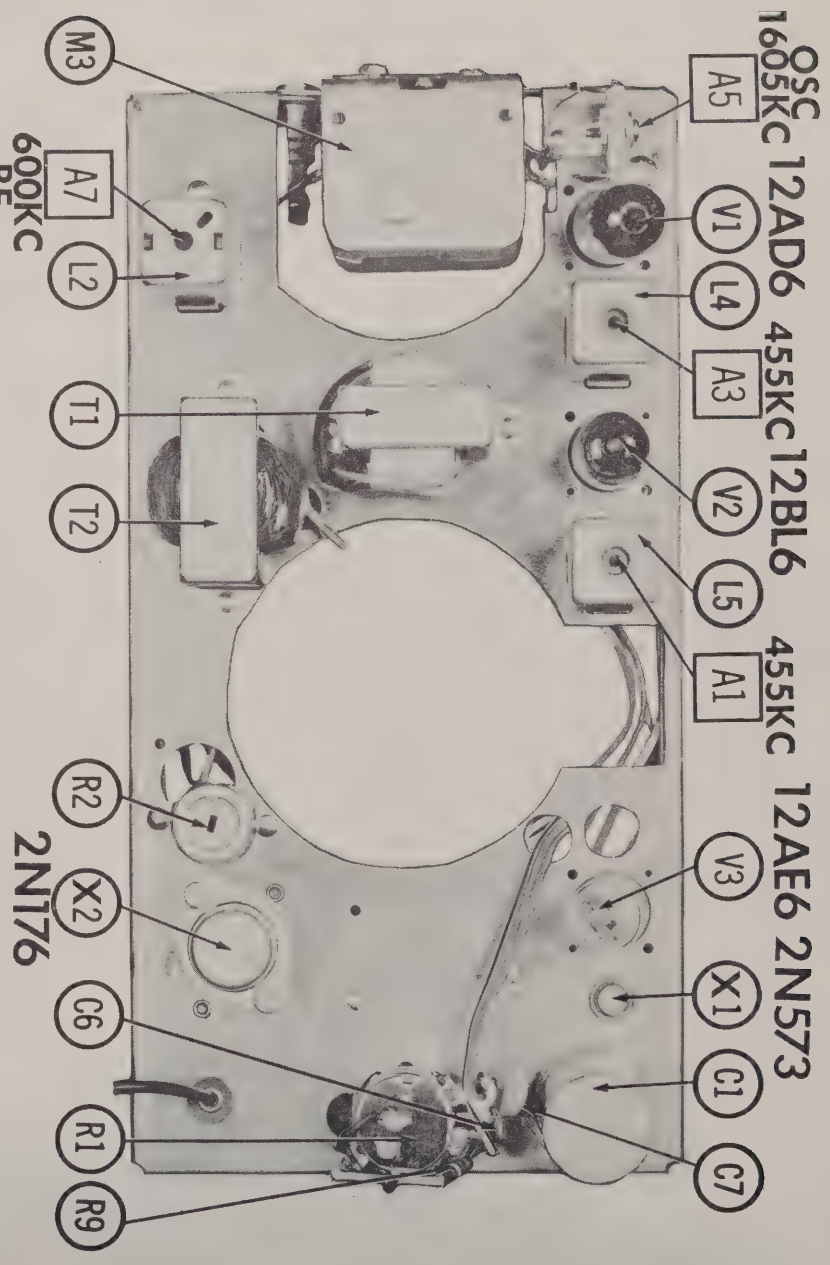
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		MOTOROLA PART No.	NOTES
	OHMS	WATT		
R3	33K		6K121704	
R4	5.6meg		6K124761	
R5	2.2meg		6K127001	
R6	5.6meg		6K127661	
R7	47K		6K121687	
R8	1.5meg		6R6460	
R9	150K		6K122323	
R10	4.7meg		6K121277	
R11	4700Ω		6K121847	
R12	680Ω		6R6040	Note 1
R13	5.6Ω	1	17K739323	
R14	10Ω cold		6K540634	
R15	1Ω	1	17K561979	
R16	470Ω			Note 2

Note 1. Some versions may use 270Ω in this application (Part #6K121303).
Note 2. Some versions may use 680Ω in this application (Part #6R6040).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		MOTOROLA PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Ant. Coil	24K562113	19-6022	TV-192	6152		
L2	Ant. Coil	24B591628					
L3	Osc. Coil	24A591629					
L4	Input IF	24K562110	16-6758	BC-352	12-C1	RF-1	
L5	Output IF	24B562109	16-6770	BC-355	12-C6		

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L6	.750A	.4Ω	.002HY	25K561990						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	12	1	25C562153						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA							NOTES
	PRI.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	2Ω Tap @ 3-4Ω	25K561989							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	5"x7"	PM	3-4Ω	50C562108	57A15	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MOTOROLA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	1AG	5A 32V	65R122345	9K562174	301005, (1AG 5A 32V)	155004	SFE4	HAF

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2	Lamp	65R533821	#1891
M3	Tuning Cap.	19B501790	2 Gang (Ant. 18-452mmf, Osc. 11-155mmf)
M4	Spark Plate	48K539953	Selenium (Use #43A539954 Bushing, #5K124848 Eyelet, #4A542137 Washer for Mounting)

WIRING DATA

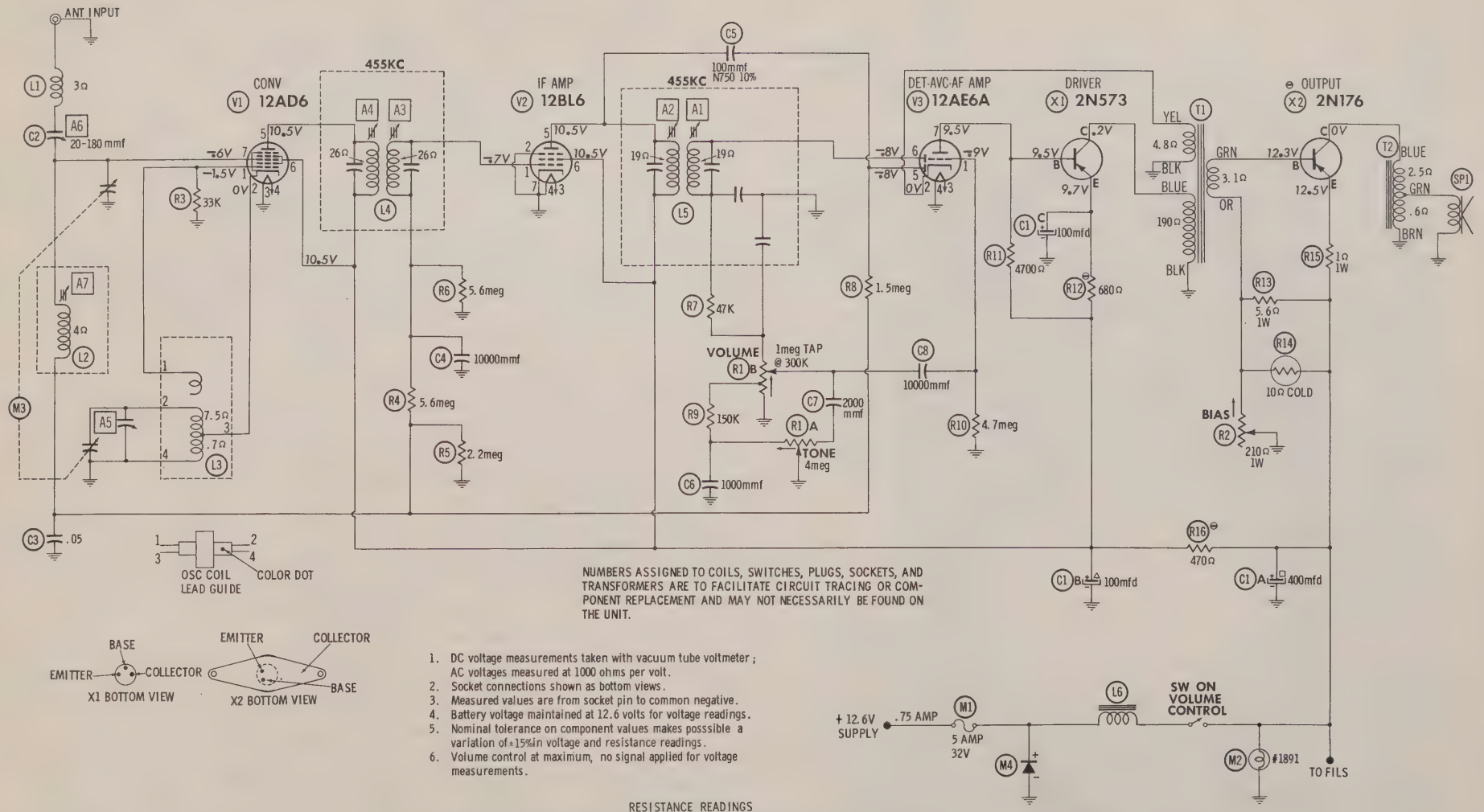
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Bonding Strap	Use BELDEN No. 8661

CHASSIS—BOTTOM VIEW

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	36B560728	Tuning
Knob	36K560729	Volume-On-Off
Knob	36B502202	Tone
Cover	15D501838	Rear
Dial Pointer	52A560792	
Dial Scale	34K562130	



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes posssible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AD6	33K	.7Ω	0Ω	2.3Ω	†500Ω	†470Ω	2.2meg
V2	12BL6	3.3meg	0Ω	2.3Ω	0Ω	†490Ω	†470Ω	0Ω
V3	12AE6A	4.7meg	4.8Ω	2.3Ω	0Ω	3.7meg	1meg	†5200Ω

TRANSISTOR CIRCUIT RESISTANCE NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.
† MEASURED FROM JUNCTION OF R15 AND R16.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1959

AMERICAN MOTORS
MODEL 8990582 (93MR)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

GONSET MODELS 3156, 3157, 3223

GONSET MODELS
3156, 3157, 3223

MODEL 3156

GONSET MODELS
3156, 3157, 3223

TRADE NAME	Gonset Models 3156, 3157, 3223
MANUFACTURER	Gonset, Division of L. A. Young Spring and Wire Corp., 801 S. Main St., Burbank, California
TYPE SET	AC Operated 9 Tube AM Communications Receiver
POWER SUPPLY	110-120 Volts AC, 50-60 Cycles
RATING	57 Watts, .55 Amp. @ 117 Volts AC
TUNING RANGES	Model 3156: 112-132MC Model 3157: 132-152MC Model 3223: Fixed Frequency

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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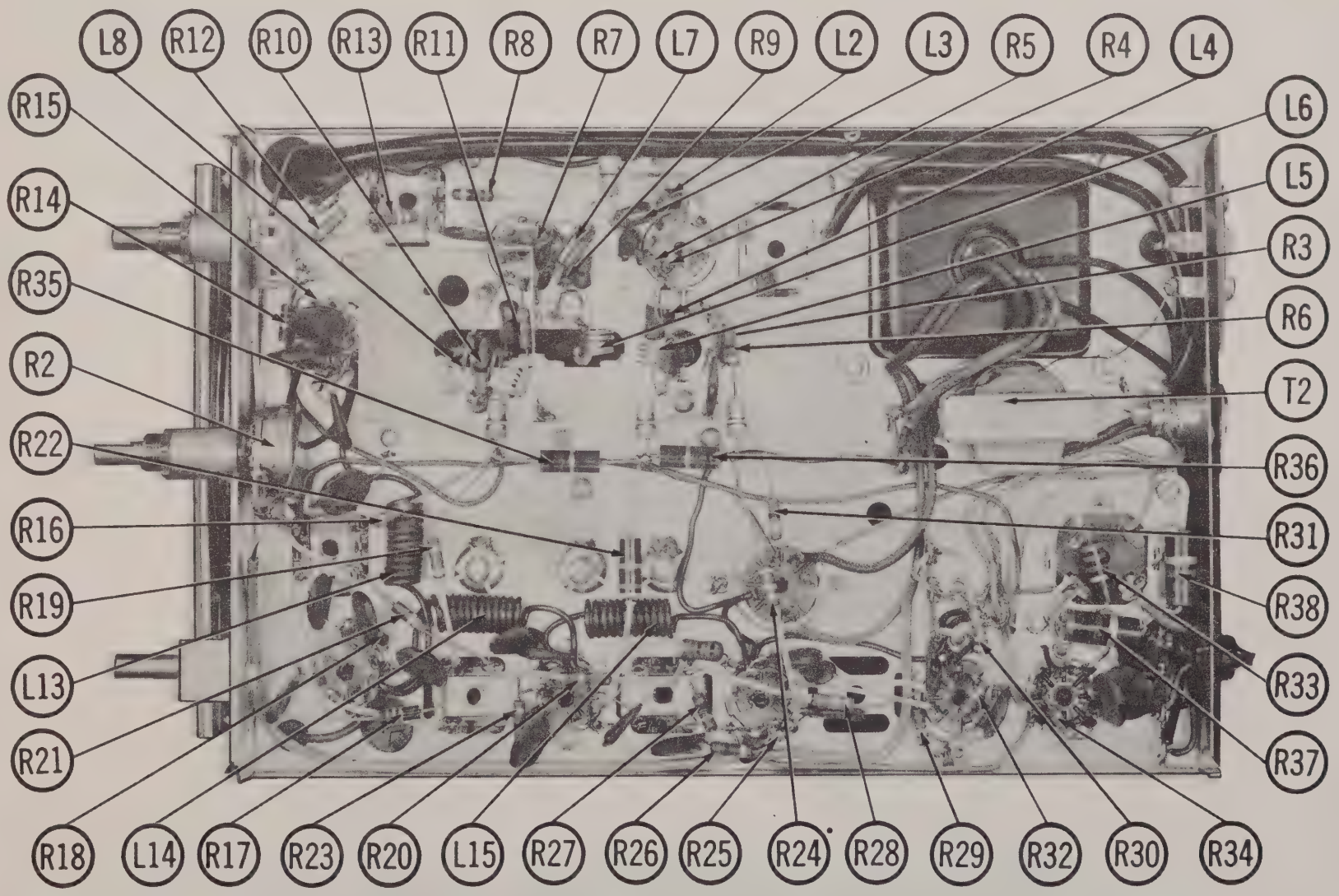
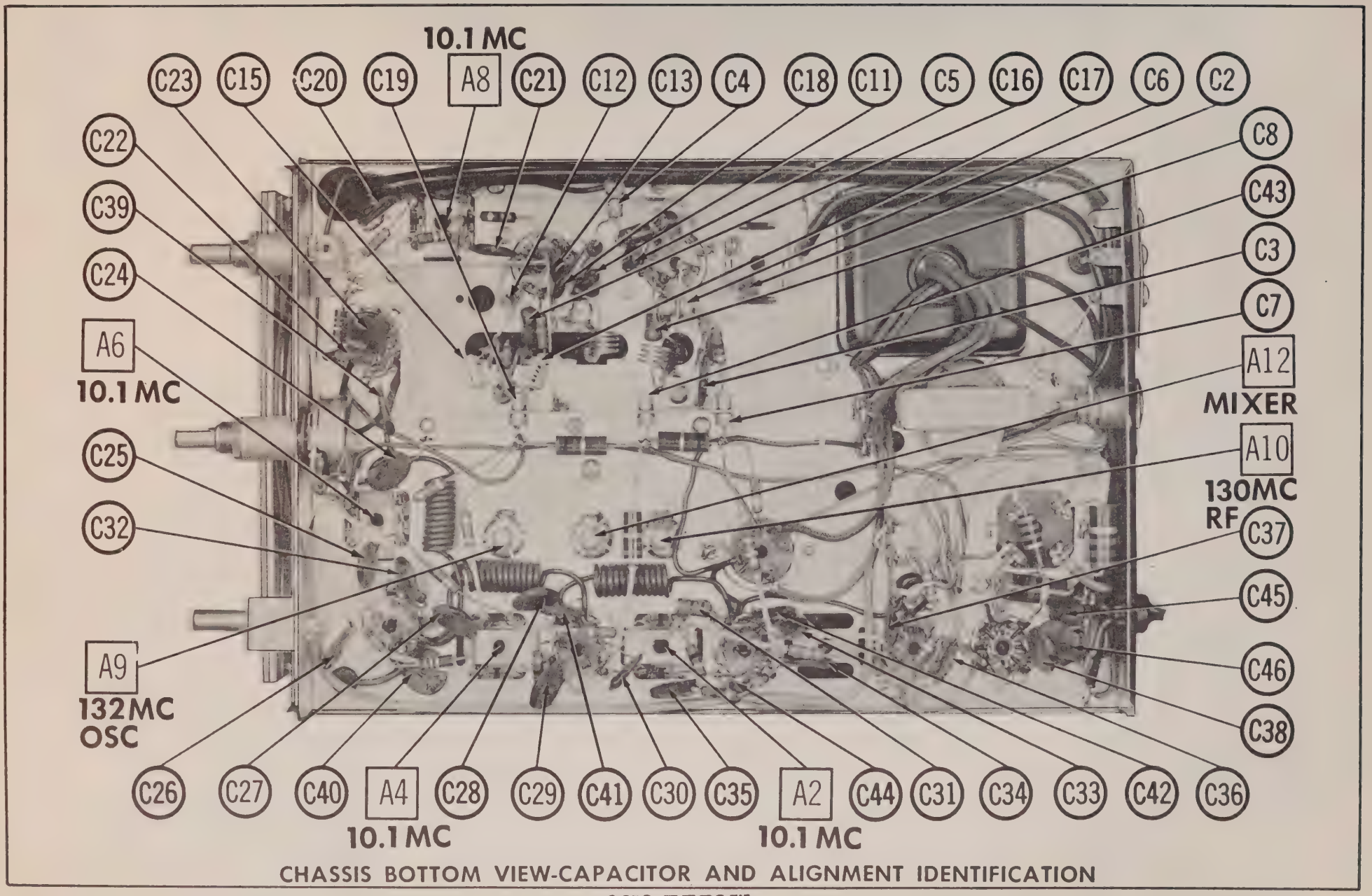
J5

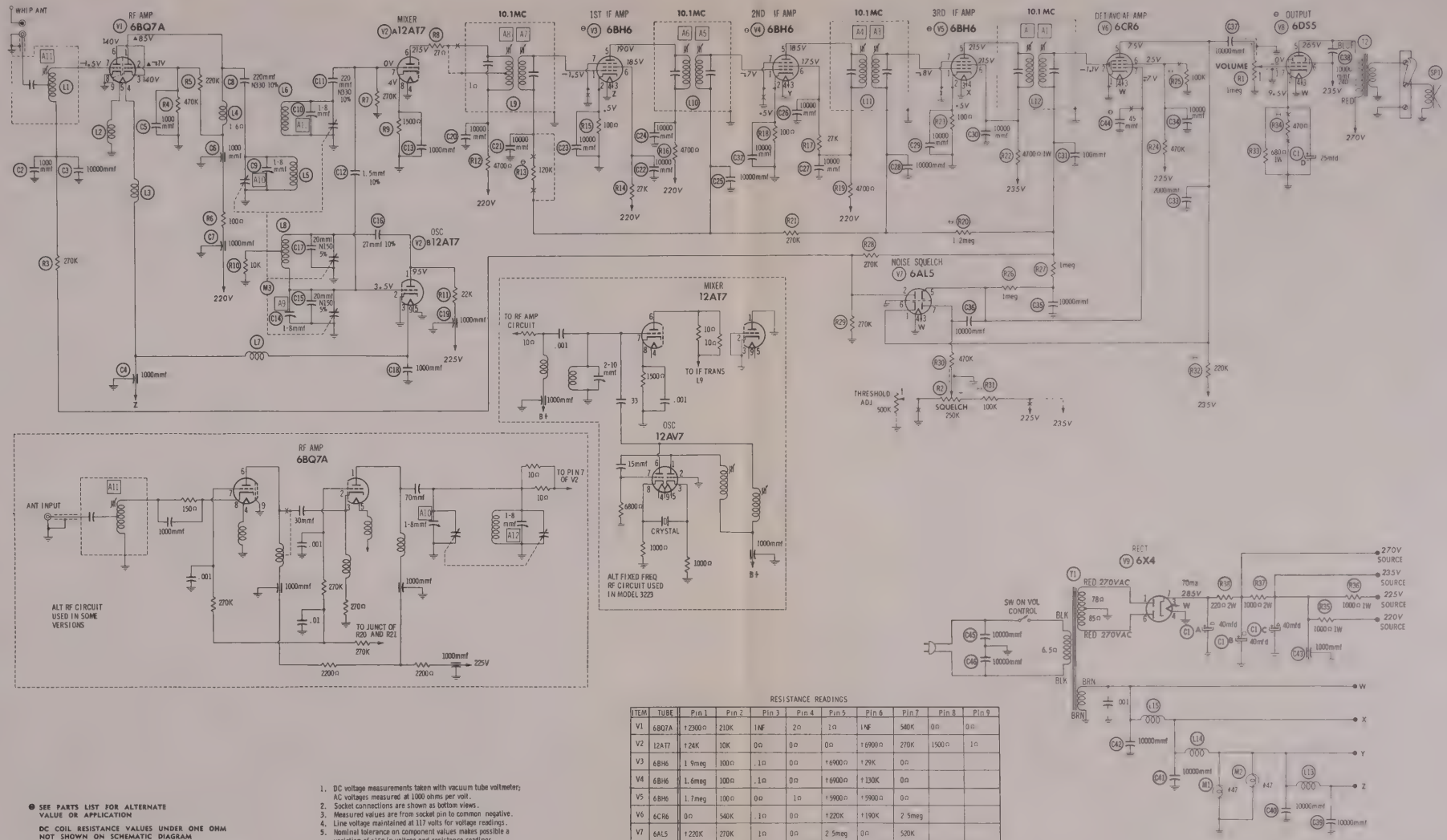
SET 442 FOLDER 6



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BQ7A	†2300Ω	210K	INF	2Ω	1Ω	INF	540K	0Ω	0Ω
V2	12AT7	†24K	10K	0Ω	0Ω	0Ω	†6900Ω	270K	1500Ω	1Ω
V3	6BH6	1.9meg	100Ω	.1Ω	0Ω	†6900Ω	†29K	0Ω		
V4	6BH6	1.6meg	100Ω	.1Ω	0Ω	†6900Ω	†130K	0Ω		
V5	6BH6	1.7meg	100Ω	0Ω	1Ω	†5900Ω	†5900Ω	0Ω		
V6	6CR6	0Ω	540K	.1Ω	0Ω	†220K	†190K	2.5meg		
V7	6AL5	†220K	270K	1Ω	0Ω	2.5meg	0Ω	520K		
V8	6DS5	0Ω	320Ω	1Ω	0Ω	†460Ω	†1200Ω	0Ω		
V9	6X4	78Ω	NC	1Ω	0Ω	TP	85Ω	¶		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V1.
• MEASURED FROM PIN 3 OF V1.
NC NO CONNECTION.
TP TIE POINT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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GONSET MODELS 3156, 3157, 3223

ALIGNMENT INSTRUCTIONS

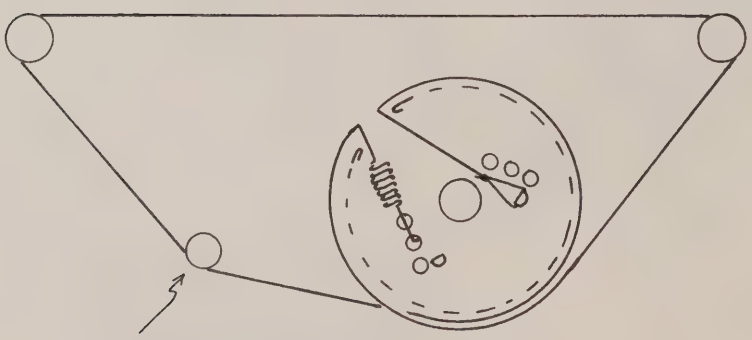
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
The receiver should be in cabinet while aligning Oscillator (A9) and Mixer (A12).
Suggested Alignment Tools:
A1 thru A8 ..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A9, A10, A12 ..... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537
A11 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 7 (grid) of 12AT7 (V2). Low side to chassis.	10.1MC (400∿ Mod)	Point of non-interference	Across voice coil	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum output.
2.	50Ω Carbon Resistor	High side thru 50Ω to antenna receptacle Low side to chassis.	132MC *	132MC *	"	A9 *	"
3.	"	"	130MC *	130MC *	"	A10 *	"
4.	"	"	112MC *	112MC *	"	A11 *	"
5.		Not used (Antenna disconnected)		Tune to background noise	"	A12	Adjust for maximum output. Repeat step 2.

* Listed Frequencies for Model 3156. Model 3157 uses 152MC, 150MC & 132MC respectively. Adjustment A10 and A11 are adjusted according to crystal selected for Model 3223.

DIAL CORD STRINGING



2 TURNS ON TUNING SHAFT

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BQ7A	
V2	Mixer-Osc.	12AT7	Note 1
V3	1st IF Amp.	6BH6	Note 2
V4	2nd IF Amp.	6BH6	Note 2
V5	3rd IF Amp.	6BH6	Note 2
V6	Det.-AF Amp.	6CR6	
V7	Noise Squelch	6AL5	
V8	Output	6DS5	Note 3
V9	Rectifier	6X4	

Note 1. In Model 3223 oscillator section is shorted and a 12AV7 is used as a crystal oscillator.
Note 2. Alternate Type 6BJ6.
Note 3. Alternate Type 6AQ5.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA							
	CAP.	VOLT.	GONSET PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450			C1480	FP384.7	TMT-154	T-785	TVLS-4708.4*
B	■40	350			BR4035	TC78	TD-40-350	MT-4540	
C	▲40	350							
D	25	50							

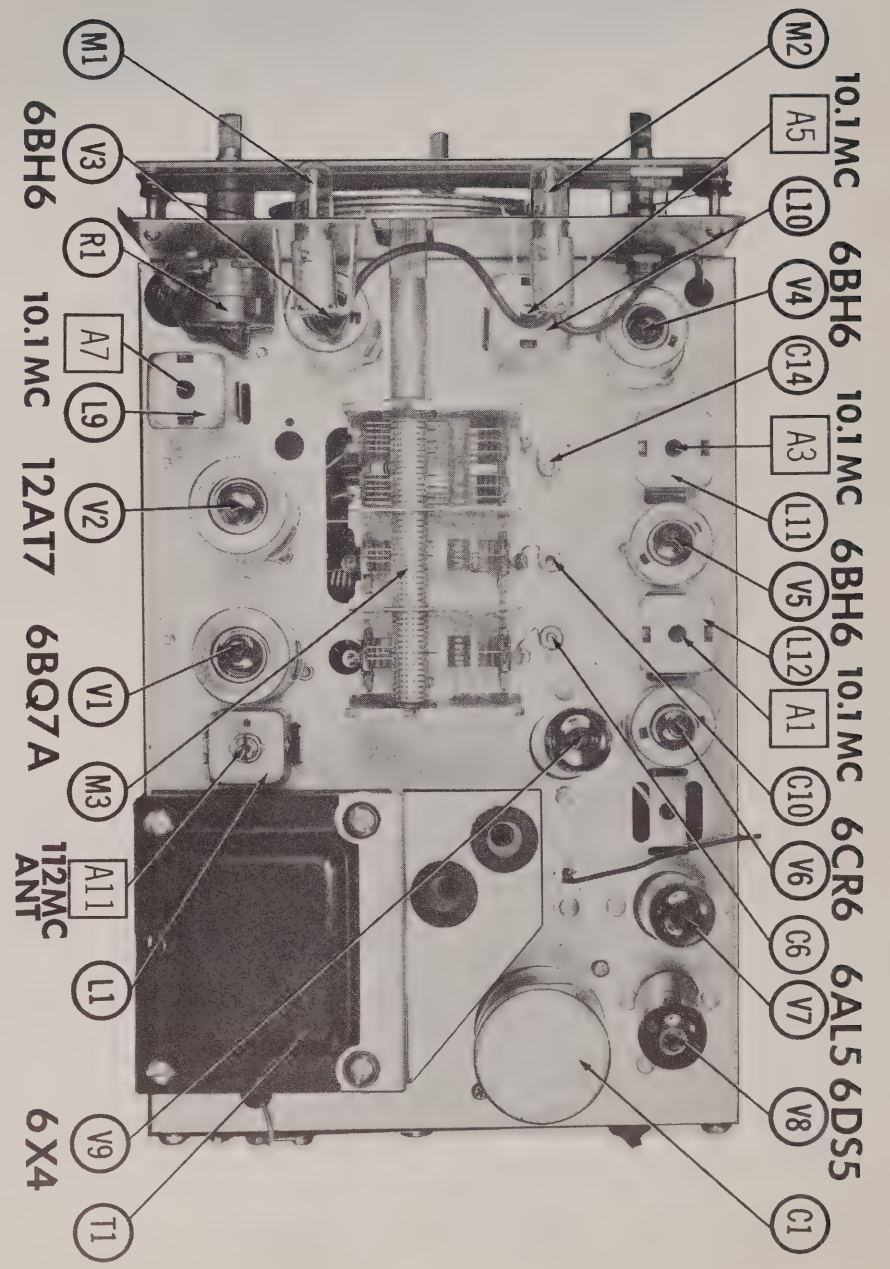
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	GONSET PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C3	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C4	1000				EF-001	MFT-1000			503C-D1	
C5	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C6	1000				EF-001	MFT-1000			503C-D1	
C7	1000				EF-001	MFT-1000			503C-D1	
C8	220		N330 10%							
C9	1-8									
C10	1-8									
C11	220		N330 10%							
C12	1.5		10%		NPO-S1 1.5	TCZ-1R5	CTA6V15C	CNO-515	5TCCB-V15S 10%*	
C13	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C14	1-8									
C15	20		N150 5%							
C16	27		10%			TCZ-27	CTA6Q27C	CNO-427	5TCC-Q27S 10%*	
C17	20		N150 5%							
C18	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C19	1000				EF-001	MFT-1000			503C-D1	
C20	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C21	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C22	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C23	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C24	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C25	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C26	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C27	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C28	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C29	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C30	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C31	100				S1 100	D6-101	LT6T1	2HV-310	5GA-T1	
C32	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C33	2000				BPD-002	DD-202	BYA10D2	B-220	5HK-D2	
C34	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C35	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C36	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C37	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C38	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	

CHASSIS—TOP VIEW



GONSET MODELS
3156, 3157, 3223

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	GONSET PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C39	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C40	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C41	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C42	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C43	1000				EF-001	MFT-1000			503C-D1	
C44	45				BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	①
C45	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C46	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	GONSET PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	1meg							Volume & Switch
R2	250K							Squelch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		GONSET PART No.	NOTES
	OHMS	WATT		
R3	270K			
R4	470K			
R5	220K			
R6	100Ω			
R7	270K			
R8	27Ω			
R9	1500Ω			
R10	10K			
R11	22K			
R12	4700Ω			
R13	120K			Note 1
R14	27K			
R15	100Ω			
R16	4700Ω			
R17	27K			
R18	100Ω			
R19	4700Ω			
R20	1.2meg			Note 2

ITEM No.	RATING		GONSET PART No.	NOTES
	OHMS	WATT		
R21	270K			
R22	4700Ω	1		
R23	100Ω			
R24	470K			
R25	100K			Note 1
R26	1meg			
R27	1meg			
R28	270K			
R29	270K			
R30	470K			
R31	100K			Note 3
R32	220K			Note 4
R33	680Ω	1		
R34	470Ω			Note 1
R35	1000Ω	1		
R36	1000Ω	1		
R37	1000Ω	2		
R38	220Ω	2		

① Not used in some versions.
② Some versions may use 2.2meg in this application.
③ Some versions may use 1meg in this application.
④ Some versions may use 100K in this application.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA							
	PRI.	SEC. 1	SEC. 2	GONSET PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V ⓐ .55A	540VCT ⓐ .070A	6.3V ⓐ 3.2A	JA-001		P-3048					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	GONSET PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5200Ω	3-4Ω	JB-001		A-3026			24S48	S-6X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	GONSET PART No.	QUAM PART No.	
SP1	4"	PM	2.9Ω		4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		GONSET PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Ant. Coil						
L2	Fil. Choke						1.9 Microhenries
L3	Fil. Choke						1.9 Microhenries
L4	RF Choke		19-1000	BC-561	4602		1 Microhenry
L5	RF Coil						
L6	Mixer Coil						
L7	Fil. Choke						1.9 Microhenries
L8	Osc. Coil						
L9	1st IF Trans.	014-001	16-3487		1463		
L10	2nd IF Trans.	014-002	16-3487		1463		
L11	3rd IF Trans.	014-002	16-3487		1463		
L12	4th IF Trans.	014-002	16-3487		1463		
L13	Fil. Choke						1.3 Microhenries
L14	Fil. Choke						1.3 Microhenries
L15	Fil. Choke						1.3 Microhenries

MISCELLANEOUS

ITEM No.	PART NAME	GONSET PART No.	NOTES
M1	Lamp		#47
M2	Lamp		#47
M3	Tuning Cap.		4 Gang

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT* Folder

GRUNDIG MAJESTIC MODEL 7018

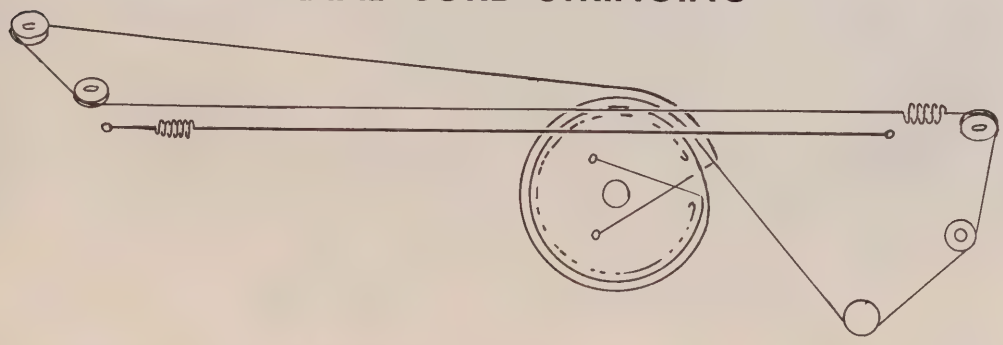
GRUNDIG MAJESTIC
MODEL 7018

GRUNDIG MAJESTIC
MODEL 7018

TRADE NAME	Grundig Majestic Model 7018		
SUPPLIER	Majestic International Sales Corp., 743 W. LaSalle St., Chicago 10, Illinois		
TYPE SET	AC Operated 6 Tube FM-BC-SW Receiver With 4 Speed Automatic Record Changer		
POWER SUPPLY	110-120 (or) 220 Volts AC, 60 Cycles	RATING	56 Watts, .56 Amp. 117 Volts AC (FM)
TUNING RANGES	BROADCAST 540-1620KC FREQ. MOD. 88-108MC	SHORT WAVE I SHORT WAVE II	5.9-13MC 12.9-23MC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE SIMILAR MONARCH UA8 - PHOTOFACT SET 381 FOLDER 11

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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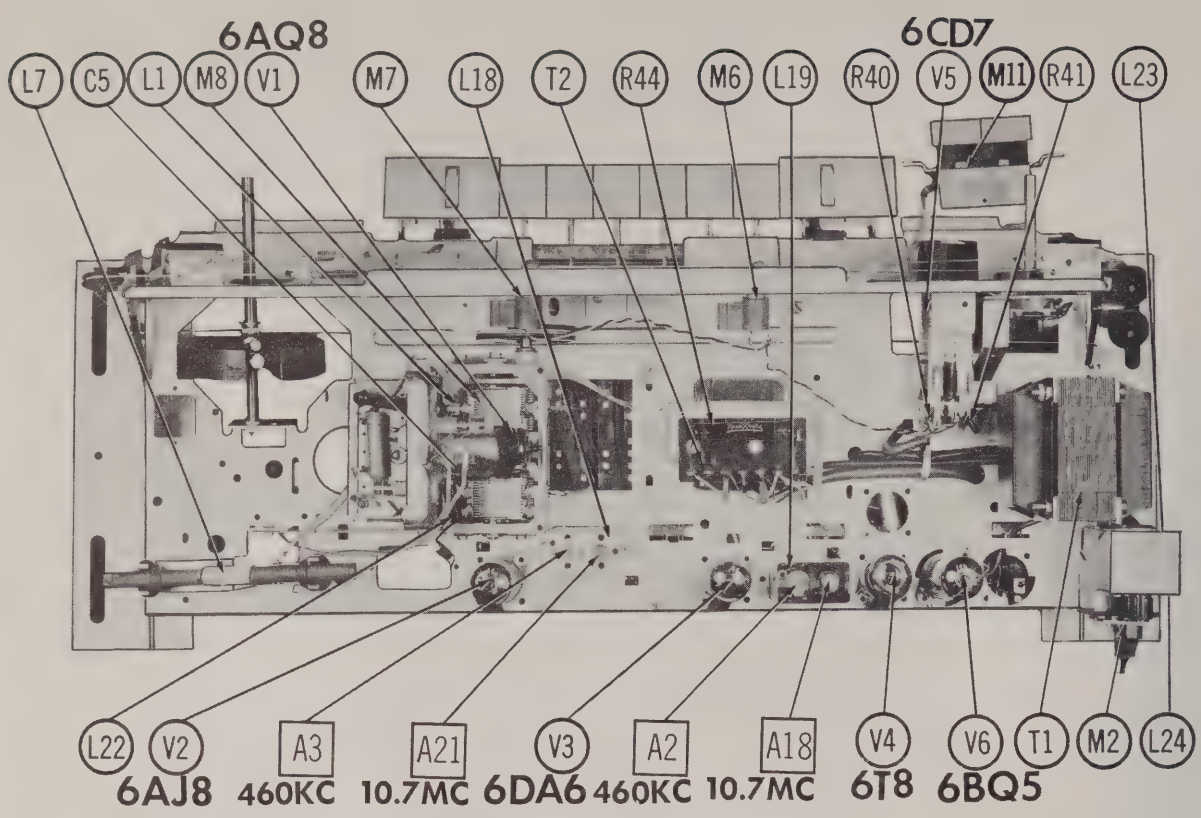
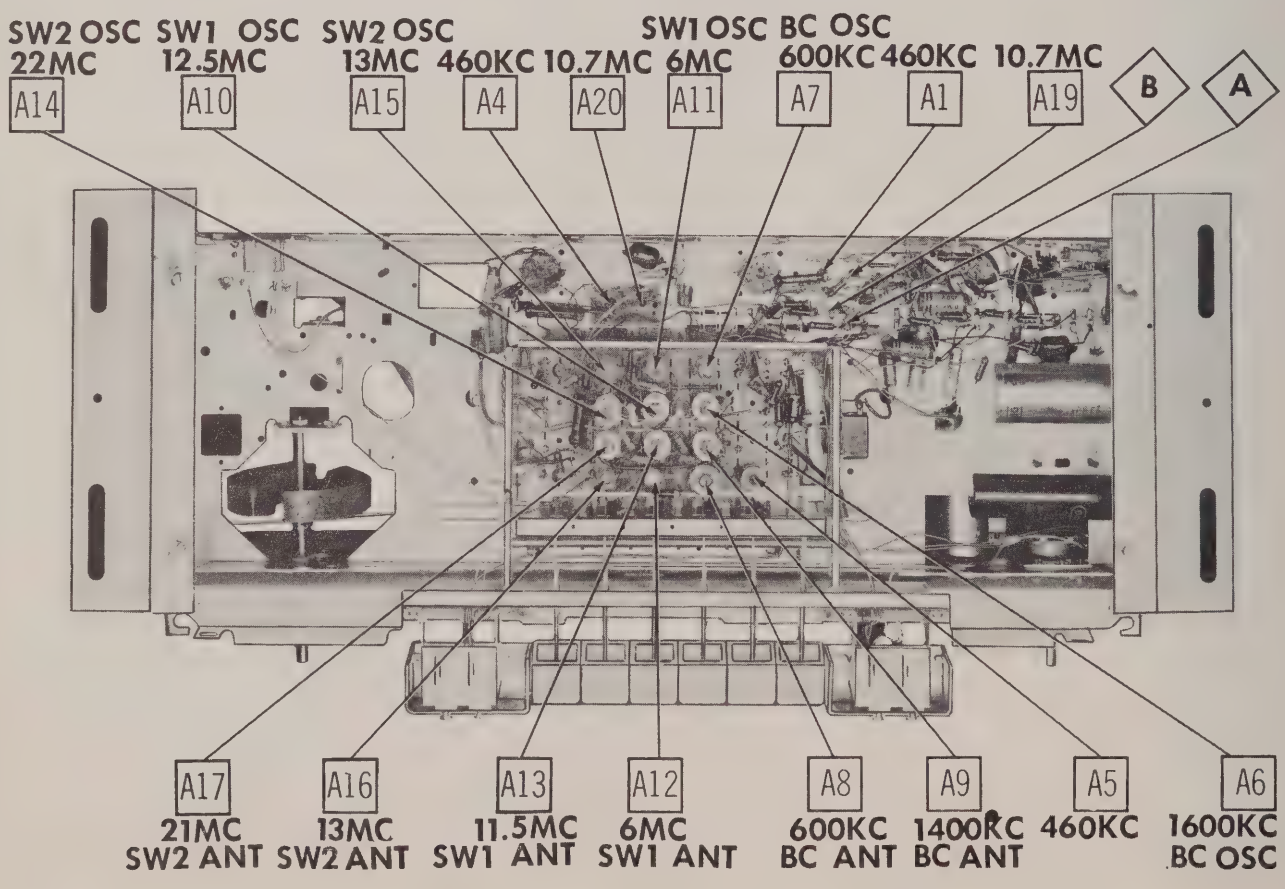
H976

DATE 5-59 SET 442 FOLDER 7

SET 442 FOLDER 7



CHASSIS - TOP VIEW



CHASSIS BOTTOM VIEW - ALIGNMENT IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Suggested Alignment Tools: A1 thru A5, A7, A9, A11, A13, A15,
A17 thru A23, A25, A27, A28..... GENERAL CEMENT #8282, 8606, 8606L, 9091
WALSCO #2526, 2541, 2543, 2544
A24, A26..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987
WALSCO #2531

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 2 (grid) of ECH81 (V2). Low side to chassis.	460KC (400~ Mod.)	BC	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum deflection.
2.	"	High side to AM antenna terminal. Low side to chassis.	"	"	"	"	A5	Adjust for MINIMUM deflection.
3.	"	"	1600KC	"	1600KC	"	A6	Adjust for maximum deflection.
4.	"	"	600KC	"	600KC	"	A7, A8	Adjust for maximum deflection. Repeat steps 3 and 4.
5.	"	"	1400KC	"	1400KC	"	A9	Adjust for maximum deflection.
6.	200mmf	"	12.5MC	SWI	12.5MC	"	A10	Adjust for maximum deflection.
7.	"	"	6.0MC	"	6.0MC	"	A11, A12	Adjust for maximum deflection. Repeat steps 6 and 7.
8.	"	"	11.5MC	"	11.5MC	"	A13	Adjust for maximum deflection.
9.	"	"	22.0MC	SWII	22.0MC	"	A14	Adjust for maximum deflection.
10.	"	"	13.0MC	"	13.0MC	"	A15, A16	Adjust for maximum deflection. Repeat steps 9 and 10.
11.	"	"	21.0MC	"	21.0MC	"	A17	Adjust for maximum deflection.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K (±1%) resistors in series from point (A) to chassis. The junction of these two resistors is alignment point (C) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
12.	200mmf	High side to pin 2 (grid) Of EF89 (V3). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point (A). Common to chassis.	A18	Adjust for maximum deflection.
13.	"	"	"	"	"	DC probe to point (B). Common to point (C).	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
14.	"	High side to pin 7 (grid) of ECC85 (V1). Low side to chassis.	"	"	"	DC probe to point (A). Common to chassis.	A20, A21, A22, A23	Adjust for maximum deflection.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
12.	200mmf	High side to pin 2 (grid) of EF89 (V3). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point (A). Low side to chassis.	A18	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
13.	"	"	"	"	"	Vert. Amp. to point (B). Low side to chassis.	A19	Reconnect stabilizing capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A18 for maximum amplitude and straightness of crossover lines.
14.	"	High side to pin 7 (grid) of ECC85 (V1). Low side to chassis.	"	"	"	Vert. Amp. to point (A). Low side to chassis.	A20, A21, A22, A23	Disconnect C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1. Reconnect C2.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
15.	270Ω Carbon Resistor	Across FM antenna leads with 270Ω in high side.	105MC (Unmod.)	FM	105MC	DC probe to point (A). Common to chassis.	A24, A25	Adjust for maximum deflection.
16.	"	"	90MC	"	90MC	"	A26, A27, A28	Adjust for maximum deflection. Repeat steps 15 and 16.

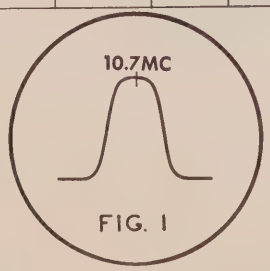


FIG. 1

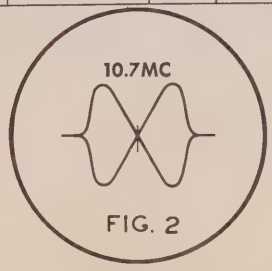
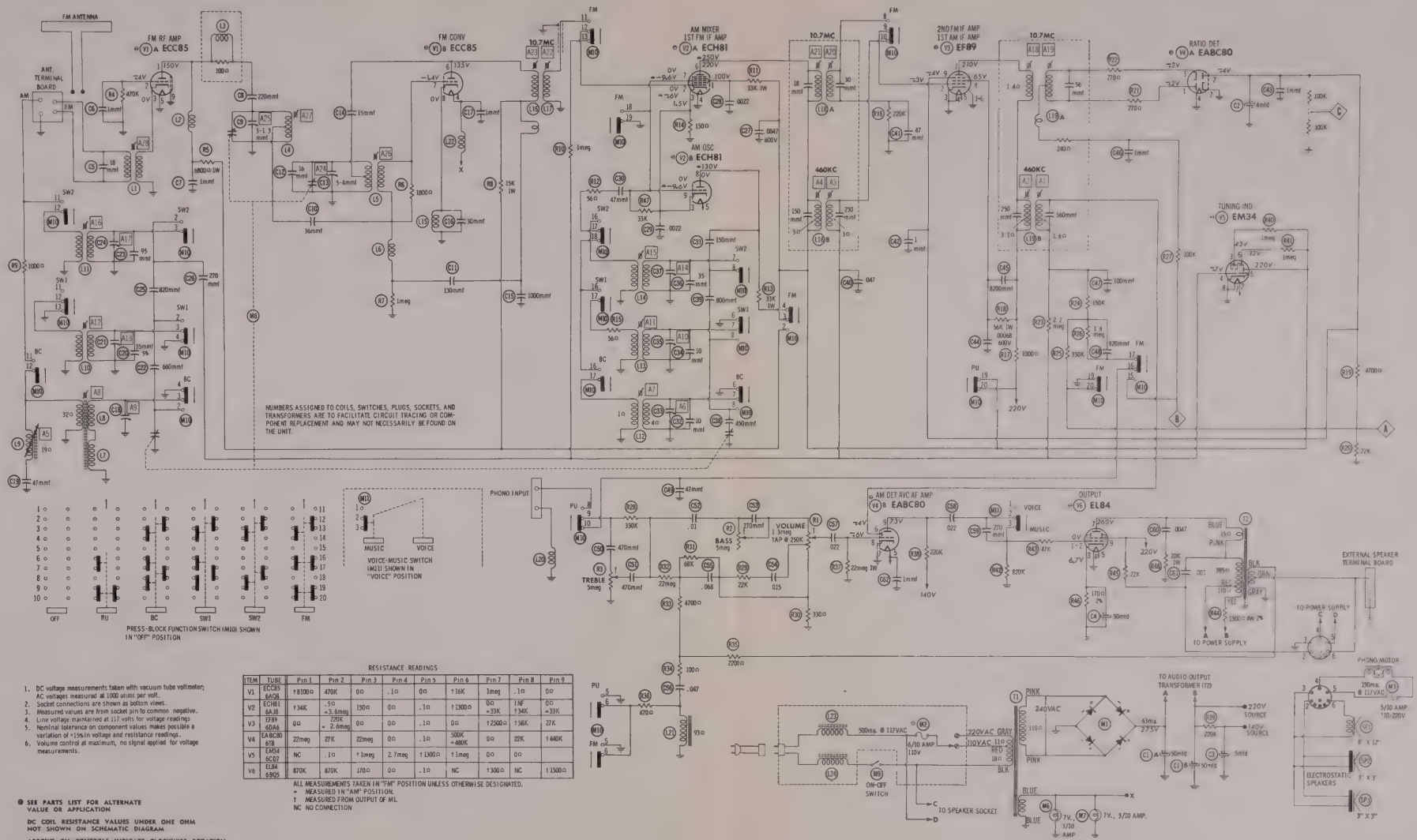


FIG. 2


FM ANTENNA
ANT. TERMINAL BOARD
FM RF AMP V1A ECC85
FM CONV V1B ECC85
AM MIXER 1ST FM IF AMP V2A ECH81
AM OSC V2B ECH81
10.7MC
2ND FM IF AMP 1ST AM IF AMP V3 EF89
RATIO DET V4A EABC80
460KC
TUNING IND V5 EM34
AM DET AVC AF AMP V4B EABC80
OUTPUT V6 EL84
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.
PHONO INPUT
VOLUME 1 3meg TAP @ 250K
BASS 5meg
TREBLE 5meg
VOICE-MUSIC SWITCH (M11) SHOWN IN "VOICE" POSITION
PRESS-BLOCK FUNCTION SWITCH (M10) SHOWN IN "OFF" POSITION
OFF
AU
BC
SW1
SW2
FM
TO AUDIO OUTPUT TRANSFORMER (T2)
220V SOURCE
140V SOURCE
TO POWER SUPPLY
EXTERNAL SPEAKER TERMINAL BOARD
PHONO MOTOR
ELECTROSTATIC SPEAKERS
ON-OFF SWITCH
TO SPEAKER SOCKET
7V., 3/10 AMP.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85 6AQ8	†8100Ω	470K	0Ω	.1Ω	0Ω	†16K	1meg	.1Ω	0Ω
V2	ECH81 6AJ8	†34K	.5Ω +3.6meg	150Ω	0Ω	.1Ω	†1300Ω	0Ω +39K	1NF †34K	0Ω +39K
V3	EF89 6DA6	0Ω	220K + 2.6meg	0Ω	0Ω	.1Ω	0Ω	†2500Ω	†58K	27K
V4	EABC80 6T8	22meg	27K	22meg	0Ω	.1Ω	500K =480K	0Ω	22K	†440K
V5	EM34 6E07	NC	.1Ω	†1meg	2.7meg	†1300Ω	†1meg	0Ω	0Ω	
V6	EL84 6P05	870K	870K	170Ω	0Ω	.1Ω	NC	†300Ω	NC	†1500Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
* MEASURED IN "AM" POSITION.
† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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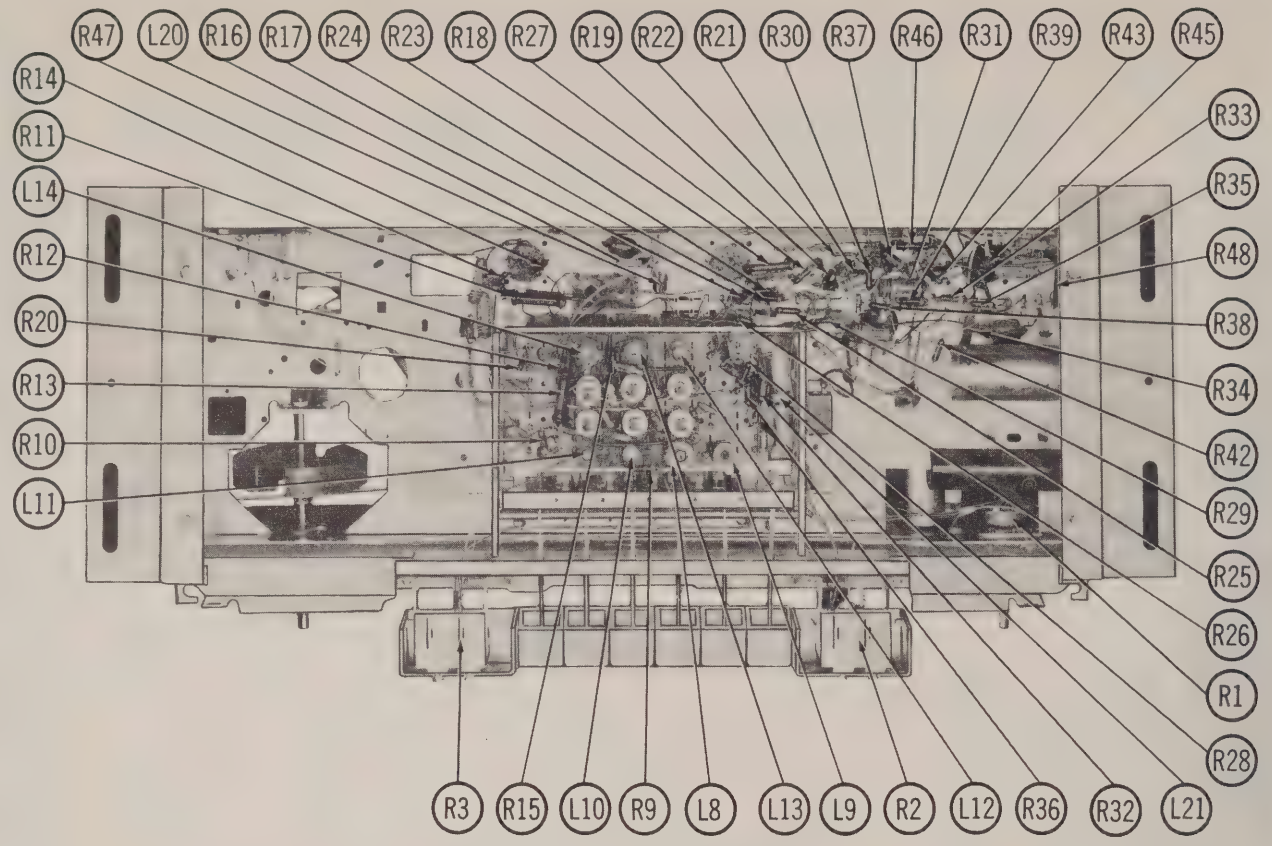
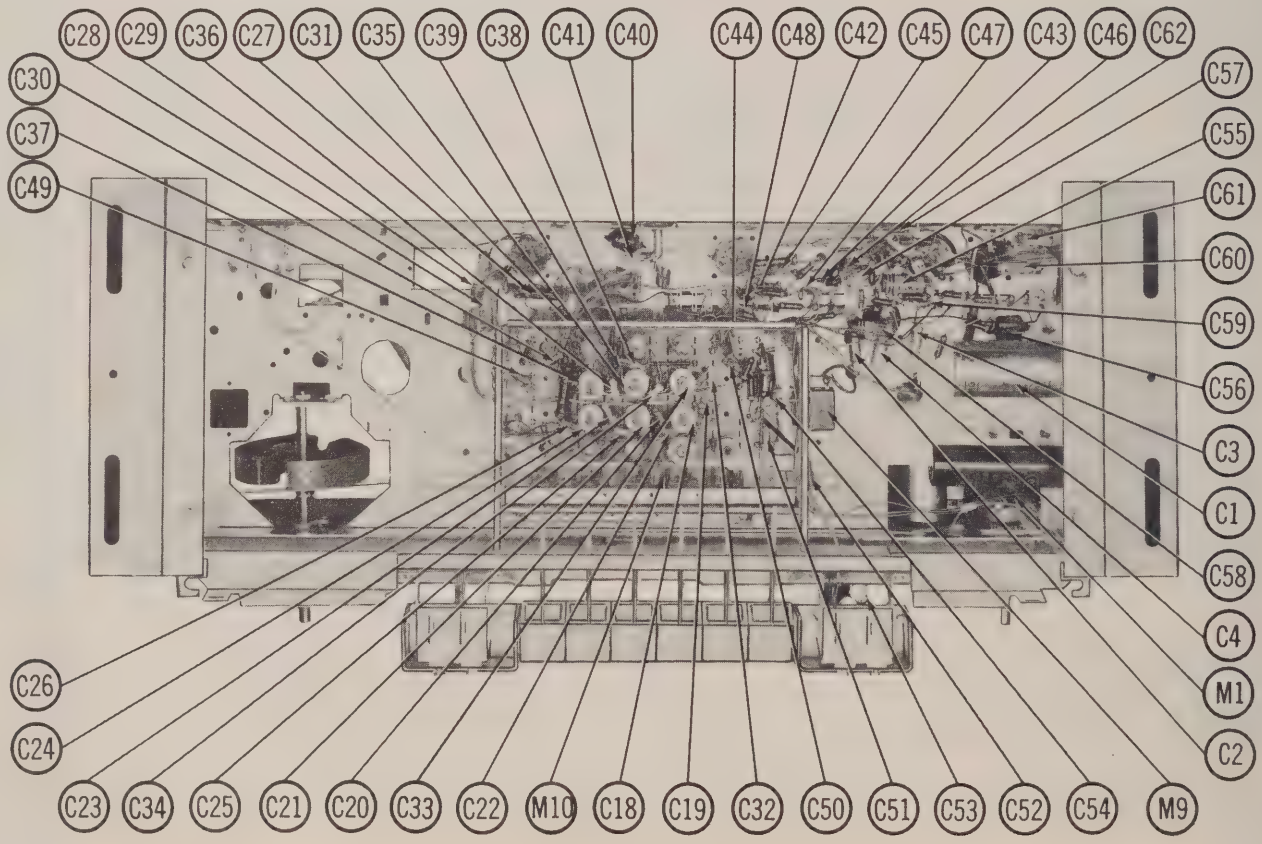
GRUNDIG MAJESTIC MODEL 7018



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.



CHASSIS BOTTOM VIEW - CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE
V1	FM RF Amp. - FM Conv.	ECC85/6AQ8 ①
V2	1st FM IF Amplifier AM Mixer - AM Osc.	ECH81/6AJ8 ①
V3	2nd FM - 1st AM IF Amp.	EF89/6DA6 ①
V4	Ratio Det. - AM Det. - AVC - AF Amplifier	EABC80/6T8 ①
V5	Tuning Indicator	EM34/6CD7 ①
V6	Output	EL84/6BQ5 ①

① Domestic type listed may not be directly interchangeable in some instances.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Grundig Majestic PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	50	385			A0490		TMS-58	TVLS-2646 *	
B	50	385			BR5035		TD-50-450		
C2	4	80		PRS150V4	BBR4-150	TT80X4	TD-4-150	TVA-1402	
C3	.5	385		PRS450V1	BR145	TC695			
C4	50	15		PRS25V50	BBR50-25	TT15X50	TD-50-25	TVA-1206	

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Grundig Majestic PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	18				SI 18	D6-180	LT6Q18	UC-5418	5GA-Q18	
C6	1					TCZ-1		CNO-510	5TCCB-V1	
C7	1					TCZ-1		CNO-510	5TCCB-V1	
C8	220				DI-220	DD-221	L10T22	B-322	5GA-T22	
C9	.3-1.3									
C10	36								5GA-Q36S *	
C11	130				1468-00013		5W5T13		1FM-413S *	
C12	16								5GA-Q16S *	
C13	.5-4									
C14	15				SI 15	D6-150	LT6Q15	UC-5415	5GA-Q15	
C15	1000				1468-001		1W5D1	MC-255	1FM-21	
C16	30				SI 30				5GA-Q30	
C17	1					TCZ-1		CNO-510	5TCCB-V1	
C18										
C19	47				1468-000047	D6-470	5W5Q47		1FM-447	
C20	35		5%						MS-435S *	
C21										
C22	660								MS-366S *	
C23	95								MS-495S *	
C24										
C25	820				1468-00082		1W5T82		1FM-382	
C26	270				1468-00027		5W5T27		1FM-327	
C27	.0047	600			P688N-0047	DD-472	CUB6D47	GEM-6247	6TM-D47	
C28	.0022	500			P688N-0022	DD-222	CUB6D22	GEM-6222	6TM-D22	
C29	.0022	250			P688N-0022	DD-222	CUB6D22	GEM-4222	6TM-D22	
C30	47				1468-000047		5W5Q47		1FM-447	
C31	150				SI 150	D6-151	LT6T15	UC-5315	5GA-T15	
C32	10				SI 10	D6-100	LT6Q10	UC-541	5GA-Q10	
C33										
C34	10				SI 10	D6-100	LT6Q10	UC-541	5GA-Q10	
C35										
C36	35								MS-435S *	
C37										
C38	450								MS-345S *	
C39	800						1W5T8	MC251	1FM-38	
C40	.047	250			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C41	47				SI 47	D6-470	LT6Q47	UC-5447	5GA-Q47	
C42	1					TCZ-1		CNO-510	5TCCB-V1	
C43	1					TCZ-1		CNO-510	5TCCB-V1	
C44	.00068	600				DD-681	LT6T68	UC-5368	5GA-T68	
C45	8200							B-282	5GA-D82	
C46	1					TCZ-1		CNO-510	5TCCB-V1	
C47	100				1468-0001	D6-101	5W5T1	MC235	1FM-31	
C48	820				1468-00082	D6-821	1W5T82		1FM-382	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Grundig Majestic PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C49	47				1468-000047	D6-470	5W5Q47		1FM-447	
C50	470				1468-00047	D6-471	5W5T47		1FM-347	
C51	470				1468-00047	D6-471	5W5T47		1FM-347	
C52	.01	150			P288N-01	DD-103	CUB2S1	GEM-211	2TM-S1	
C53	270				1468-00027	D6-271	5W5T27		1FM-327	
C54	.015	250			P488N-015	DD16-153	CUB4S15	GEM-4115	4TM-S15	
C55	.068	250			P488N-068		CUB6S68	GEM-4168	6TM-S68	
C56	.047	125			P288N-047	DF-503	CUB2S47	GEM-2147	2TM-S47	
C57	.022	250			P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	
C58	.022	500			P688N-022	DD-203	CUB6S22	GEM-6122	6TM-S22	
C59	270				1468-00027	D6-271	5W5T27		1FM-327	
C60	.0047	500			P688N-0047	DD-472	CUB6D47	GEM-6247	6TM-D47	
C61	.001	500			P688N-001	DD-102	CUB6D1	GEM-621	6TM-D1	
C62	1					TCZ-1		CNO-510	5TCCB-V1	

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Grundig Majestic PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1.3meg	½	7801-038					Volume, Tap ⓐ 250K
B	Shaft							
R2	5meg	½	7806-182					Bass
R3	5meg	½	7806-180					Treble

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Grundig Majestic PART No.	NOTES
R4	470K			
R5	6800Ω	1		
R6	1800Ω			
R7	1meg			
R8	15K	1		
R9	1000Ω			
R10	1meg			
R11	33K	1		
R12	56Ω			
R13	33K	1		
R14	150Ω			
R15	56Ω			
R16	220K			
R17	1000Ω			
R18	56K	1		
R19	4700Ω			
R20	22K			
R21	270Ω			
R22	270Ω			
R23	2.2meg			
R24	150K			
R25	330K			
R26	1.8meg			

ITEM No.	RATING OHMS	RATING WATT	Grundig Majestic PART No.	NOTES
R27	100K			
R28	330K			
R29	22K			
R30	330Ω			
R31	68K			
R32	22meg			
R33	4700Ω			
R34	100Ω			
R35	2200Ω			
R36	470Ω			
R37	22meg	1		
R38	220K			
R39	220K			
R40	1meg			
R41	1meg			
R42	820K			
R43	47K			
R44	1300Ω 2%	4		
R45	22K			
R46	170Ω 2%			
R47	33K			
R48	10K	1		

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA Grundig Majestic PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	220V Tap ⓐ 117V ⓐ .5A	240V ⓐ .063A	6.3V ⓐ 2.6A	9078-024						

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA Grundig Majestic PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5300Ω Tap ⓐ 5000Ω and 1500Ω	5Ω Tap ⓐ 3Ω	9066-047							

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA Grundig Majestic PART No.	QUAM PART No.	NOTES
SP1	8" x 12"	PM	2-3Ω	7046-001		
SP2	3" x 3"	Electrostatic		7082-002		
SP3	3" x 3"	Electrostatic		7082-002		

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Grundig Majestic PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Ant. Trans.	BV1974					
L2	RF Choke	BV1975	19-1001	BC-562	4604		1.5 Microhenries Wound on 100Ω resistor
L3	RF Choke	BV1956					
L4	FM RF Coil	9208-025					
L5	FM Osc. Coil	9208-024					
L6	RF Choke	BV1976					2.85 Microhenries
L7	Loopstick	FA9238-013					
L8	BC Ant. Coil	BV1711					
L9	IF Trap Coil	9288-055					
L10	SW1 Ant. Coil	9231-003					5.9MC - 13MC
L11	SW2 Ant. Coil	9232-005					12.9MC - 23MC
L12	BC Osc. Coil	BV1681					
L13	SW1 Osc. Coil	5231-002					5.9MC - 13MC
L14	SW2 Osc. Coil	5232-006					12.9MC-23MC
L15	Cathode Choke	BV1950	19-1000	BC-561	4602		1.25 Microhenries
L16	1st FM IF Pri.	BV1977					
L17	1st FM IF Sec.	BV1978					
L18A B	1st AM IF 2nd FM IF	FI 7207-325					
L19A B	2nd AM IF Ratio Detector	FII 7207-317					
L20	RF Choke	BV-2149	19-1000	BC-561	4602		1.2 Microhenries
L21	Tone Choke	9217-009					
L22	Fil. Choke	9238-026	19-1001	BC-562	4604		1.5 Microhenries
L23	Line Choke	9227-004					17 Microhenries
L24	Line Choke	9227-005					15 Microhenries

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Grundig Majestic PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	NOTES
M1	.063A	B250C75N2		61-4037	D-64 ①	① Silicon Type; add 15Ω (MINIMUM) resistor in series

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA Grundig Majestic PART No. FUSE	Grundig Majestic PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2		0.6A 110V S/B	0.6A 110V *					
M3		0.5A 110-220V S/B	0.5A 110-220V					

* 0.3A Fuse used with 220VAC source.

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA Grundig Majestic PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	REMARKS
M4		55-T or 81-TB	GD-J			

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

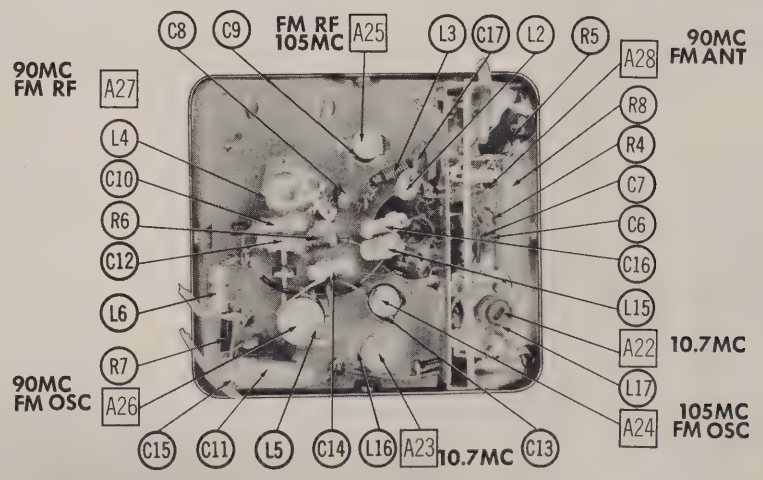
ITEM No.	REPLACEMENT DATA Grundig Majestic PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M5		† S-66 or †♦ S-66SD or ♦ S-66D	† W-75TPS or †♦ W-75DS or ♦ W-75TPD	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	Grundig Majestic PART No.	NOTES
M6	Lamp		7V, 0.3A
M7	Lamp		7V, 9.3A
M8	Tuning Cap.	9653-407	4 Gang (AM Sections: 11.5-331.5mmf, Osc. 11.5-411.5mmf)
M9	Switch	9227-004	Power On-Off (SPST, Slide Acctuated Type)
M10	Switch		Function (Press Block, Slide Type)
M11	Switch	7612-011	Voice-Music (SPDT, Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors; 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length); 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



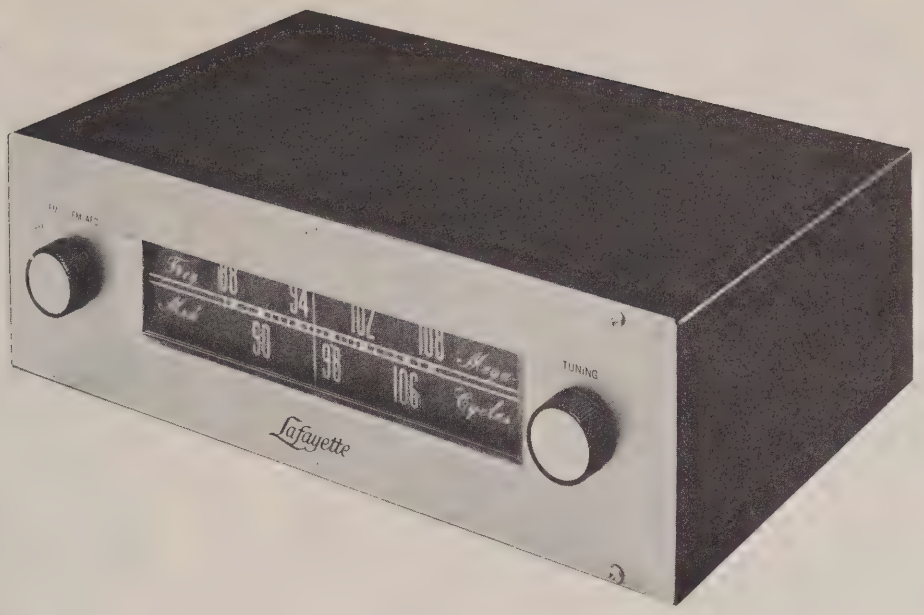
SUB CHASSIS

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

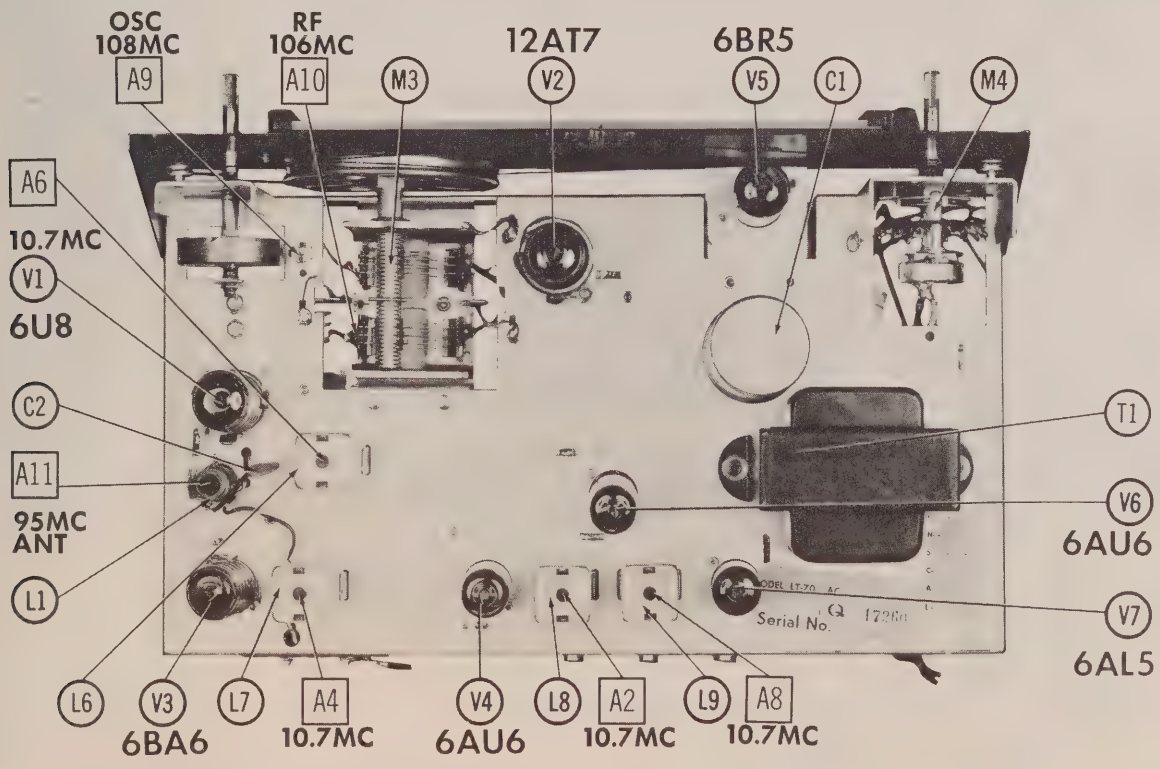
LAFAYETTE MODEL LT-70

LAFAYETTE
MODEL LT-70



TRADE NAME	Lafayette Model LT-70
SUPPLIER	Lafayette Radio, 165-08 Liberty Ave., Jamaica 33, N. Y.
TYPE SET	AC Operated 7 Tube FM Tuner
POWER SUPPLY	105 - 125 Volts AC, 60 Cycles RATING 28 Watts, .28 Amp. @ 117 Volts AC
TUNING RANGE-FREQ. MOD.	88 - 108MC

LAFAYETTE
MODEL LT-70



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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H953

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amp. -Mixer	6U8	
V2	Osc. -AFC	12AT7	
V3	1st IF Amplifier	6BA6	
V4	2nd IF Amplifier	6AU6	

ITEM No.	USE	TYPE	NOTES
V5	Tuning Indicator	EM80/6BR5	
V6	Limiter	6AU6	
V7	Discriminator	6AL5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Lafayette PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	▲40	200	E-212-4	AFHS3-94	C0150 BR3025	FP318.74	TMT-19 TD-30-250	TVLS-3482.1*	
B	■40	200							
C	▲20	200							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	Lafayette PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	100		N750 10%		N750-DI 100	DTN-100	C10T1U	CN7-310	5TCU-T1S 10%*	
C3	220				DI 220	DD-221	L10T22	B-322	5GA-T22	
C4	5000				BPD-005	DD-502	L10D5	B-250	5HK-D5	
C5	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C6	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C7	100				BPD-0001	DD-101	L10T1	CNO-310	5GA-T1	
C8	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C9	100				DI 100	DD-101	L10T1	CNO-310	5GA-T1	
C10	2.2				NPO-SI 2.2	TCZ-2R2	CTA6V22C	CNO-522	5TCCB-V22	
C11	68		NPO		NPO-SI 68	TCZ-68	CTA6Q68C	CNO-468	5TCC-Q68	
C12	910						L10T91		5GA-T91S *	
C13	470				BPD-00047	DD-471	L10T47	B-347	5GA-T47	
C14	470				BPD-00047	DD-471	L10T47	B-347	5GA-T47	
C15	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C16	10		N750		N750-DI 10	DTN-10	CTA6Q1U	CN7-410	5TCU-Q1	
C17	470				BPD-00047	DD-471	L10T47	B-347	5GA-T47	
C18	.05	200			P288N-05	DF-503	CUB2S5	GEM-415	4TM-S5	
C19	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C20	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C21	100				BPD-0001	DD-101	L10T1	CNO-310	5GA-T1	
C22	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C23	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C24	47				BPD-000047	DD-470	L10Q47	CNO-447	5GA-Q47	
C25	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C26	10000				BPD-01	DD-103	L10S1	B-110	5HK-S1	
C27	100				BPD-0001	DD-101	L10T1	CNO-310	5GA-T1	
C28	470				BPD-00047	DD-471	L10T47	B-347	5GA-T47	
C29	330				BPD-00033	DD-331	L10T33	B-333	5GA-T33	
C30	.05	200			P288N-05	DF-503	CUB2S5	GEM-415	4TM-S5	
C31										

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Lafayette PART No.	NOTES
	OHMS	WATT		
R1	270K			
R2	220Ω			
R3	68Ω			
R4	2.2meg			
R5	15K			
R6	22K			
R7	10K			
R8	100Ω			

ITEM No.	RATING		Lafayette PART No.	NOTES
	OHMS	WATT		
R9	470K			
R10	47K			
R11	560Ω			
R12	2.2meg			
R13	1000Ω			
R14	220K			
R15	1000Ω			
R16	2.2meg			

RESISTORS (cont)

ITEM No.	RATING		Lafayette PART No.	NOTES
	OHMS	WATT		
R17	390K			
R18	100K			
R19	10K			
R20	15K			
R21	1000Ω			
R22	100K			

ITEM No.	RATING		Lafayette PART No.	NOTES
	OHMS	WATT		
R23	100K			
R24	33K			
R25	33K			
R26	1meg			
R27	390Ω	1		
R28	390Ω	1		

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Lafayette PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Ant. Coil	1102B-4					
L2	RF Choke	1104-4		SW-631			4.7 Microhenries
L3	RF Coil	1100-3					
L4	RF Choke	1104-3	19-1002	SW-630	4606		2.7 Microhenries
L5	Osc. Coil	O-156-5					
L6	1st IF Trans.	1038B-5	16-3487	FM-254	1463		
L7	2nd IF Trans.	1038B-5	16-3487	FM-254	1463		
L8	3rd IF Trans.	1038B-5	16-3487	FM-254	1463		
L9	Discriminator	1038B-2	17-3494	FM-253	1464		

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA						
	PRI.	SEC. 1	Lafayette PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ .28A	120V@ .037A Tap@ 6.3V@ 2.3A	PT-157A	P9102	P-3045		PA8421	26R38	R-30X

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	Lafayette PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.037A	8018B-3	1234AH	T065 SD-94①	65A K200① ②	① Silicon Type ② Add 10Ω Resistor in series

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M2	Lamp		#47
M3	Tuning Cap.	V222B-3	2 Gang
M4	Switch	8089-6	Function Selector (3 Position, Rotary, Wafer Type, With Rotary, Snap Type, On-Off).

CABINETS & CABINET PARTS

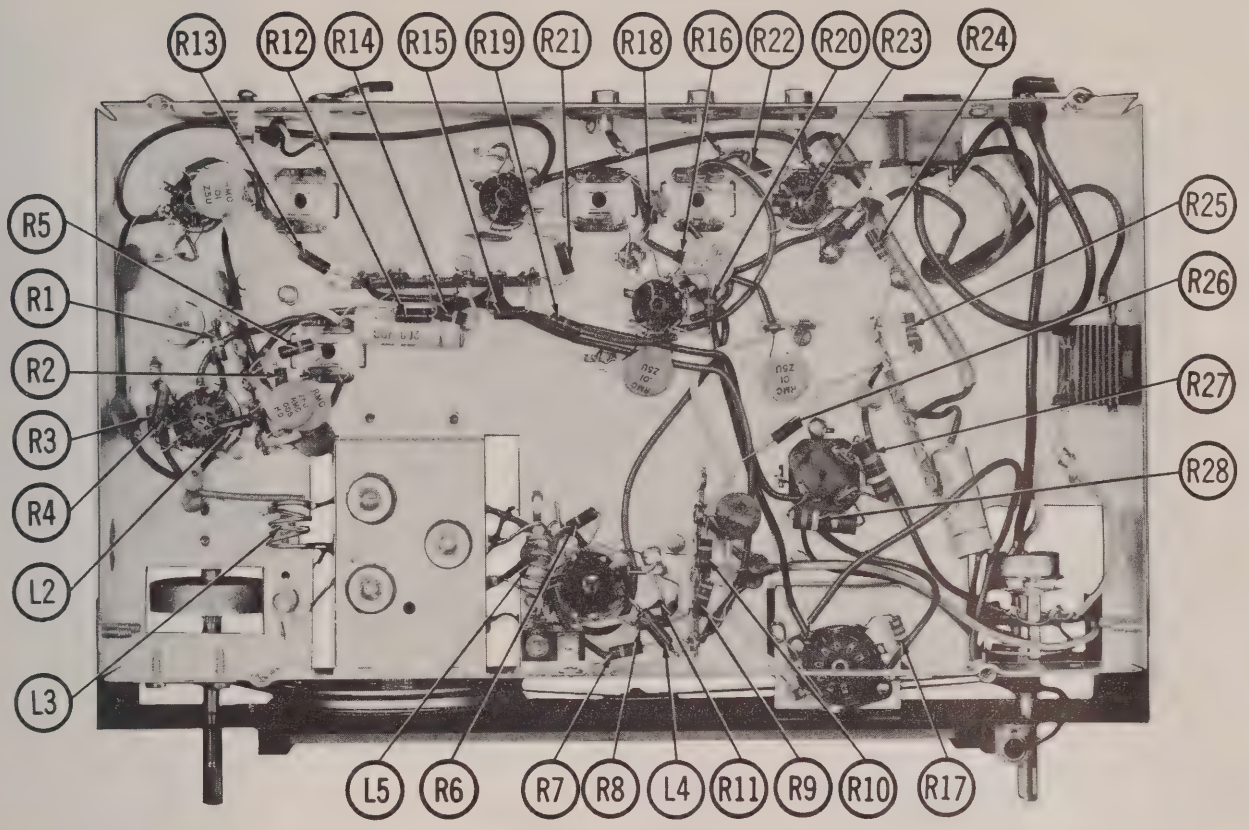
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	K472-7	Tuning
Knob	K472-6	Function Selector
Dial Scale	DG-607	

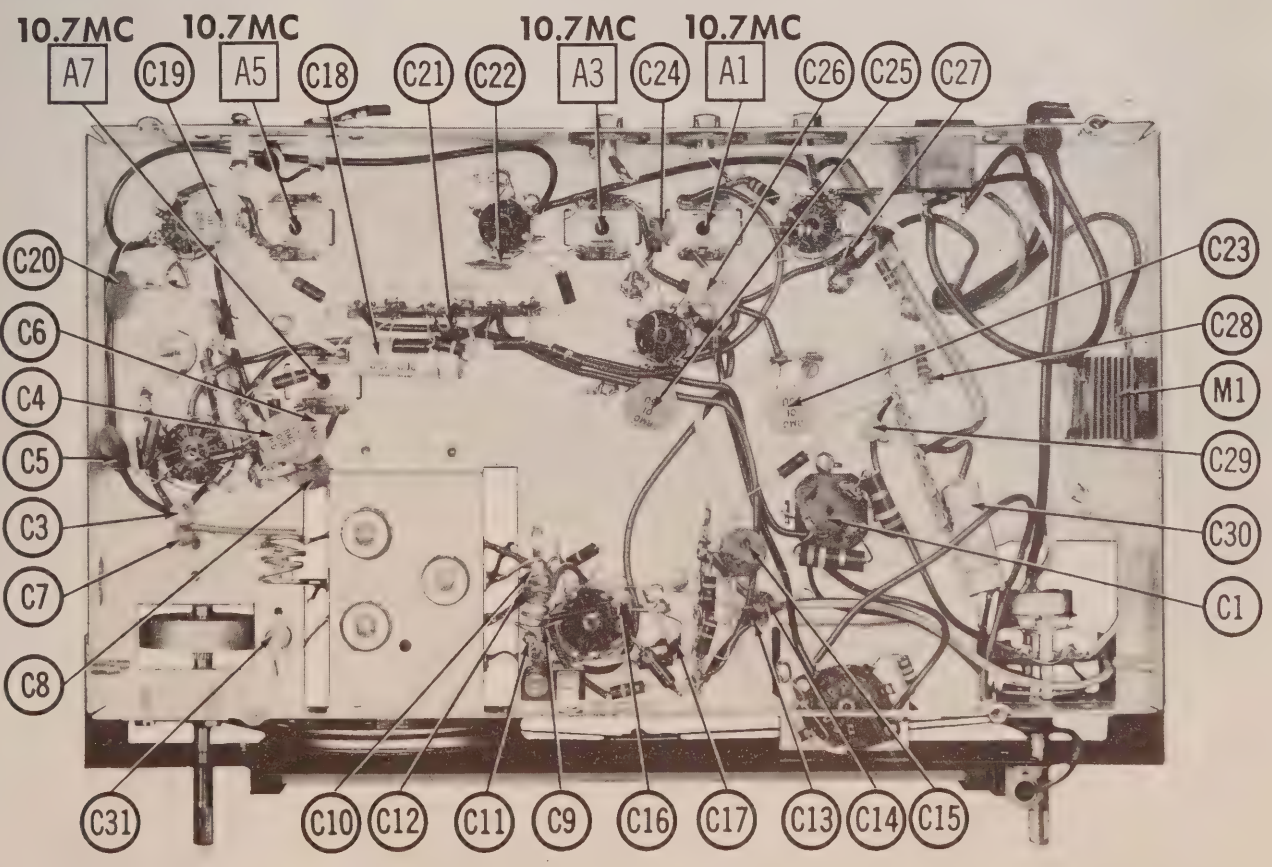
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT



CHASSIS BOTTOM VIEW - CAPACITOR, MISC, & ALIGN IDENT

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Selector switch to "FM" (NO-AFC)
To set pointer, close tuning gang and move pointer to coincide with reference line near 88MC calibration.
Suggested Alignment tools:

A1 thru A8	GENERAL CEMENT #5097, 8727 WALSCO #2515
A9	GENERAL CEMENT #5003, 8721, 8722 WALSCO #2512, 2519, 2525
A10	GENERAL CEMENT #5009, 8195, 8274, 8275, 8728 WALSCO #2515, 2531, 2532 Fiber tools because of proximity to osc. coil.
All	GENERAL CEMENT #5009, 8271, 8275, 8276, 8721, 8722, 9150, 9298 WALSCO #2516, 2519

IF ALIGNMENT USING AM SIGNAL GENERATOR & VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01 mfd.	High side to FM RF Stator lug of tuning gang. Low side to chassis.	10.7MC (Unmod.)	Point of non-interference.	DC probe thru 1meg. to point Ⓐ. Common to chassis.	A1, A2, A3, A4, A5, A6, A7	Adjust for maximum deflection.
2.	"	"	"	"	DC probe thru 1meg to point Ⓑ. Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR & OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	.01 mfd.	High side to FM RF stator lug of tuning gang. Low side to chassis.	10.7MC (450KC SWP)	Point of non-interference.	Vert. amp. thru 1meg to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, A5, A6, A7	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
2.	"	"	"	"	Vert. amp. thru 1meg to point Ⓑ. Low side to chassis.	A8	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A1 for maximum amplitude and straightness of cross-over lines.

RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	270Ω Carbon Resistor	Across antenna terminals with 270Ω in high side.	108MC (Unmod.)	108MC	High side thru 1meg to point Ⓐ. Common to chassis.	A9	Adjust for maximum deflection.
4.	"	"	106MC	Tune to 106MC signal.	"	A10	Adjust for maximum deflection while rocking tuning gang.
5.	"	"	95MC	Tune to 95MC signal.	"	All	Adjust for maximum deflection.

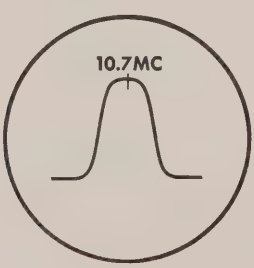


FIG. 1

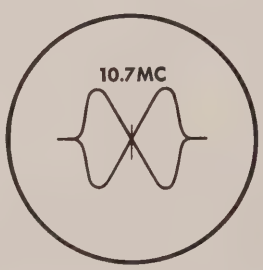
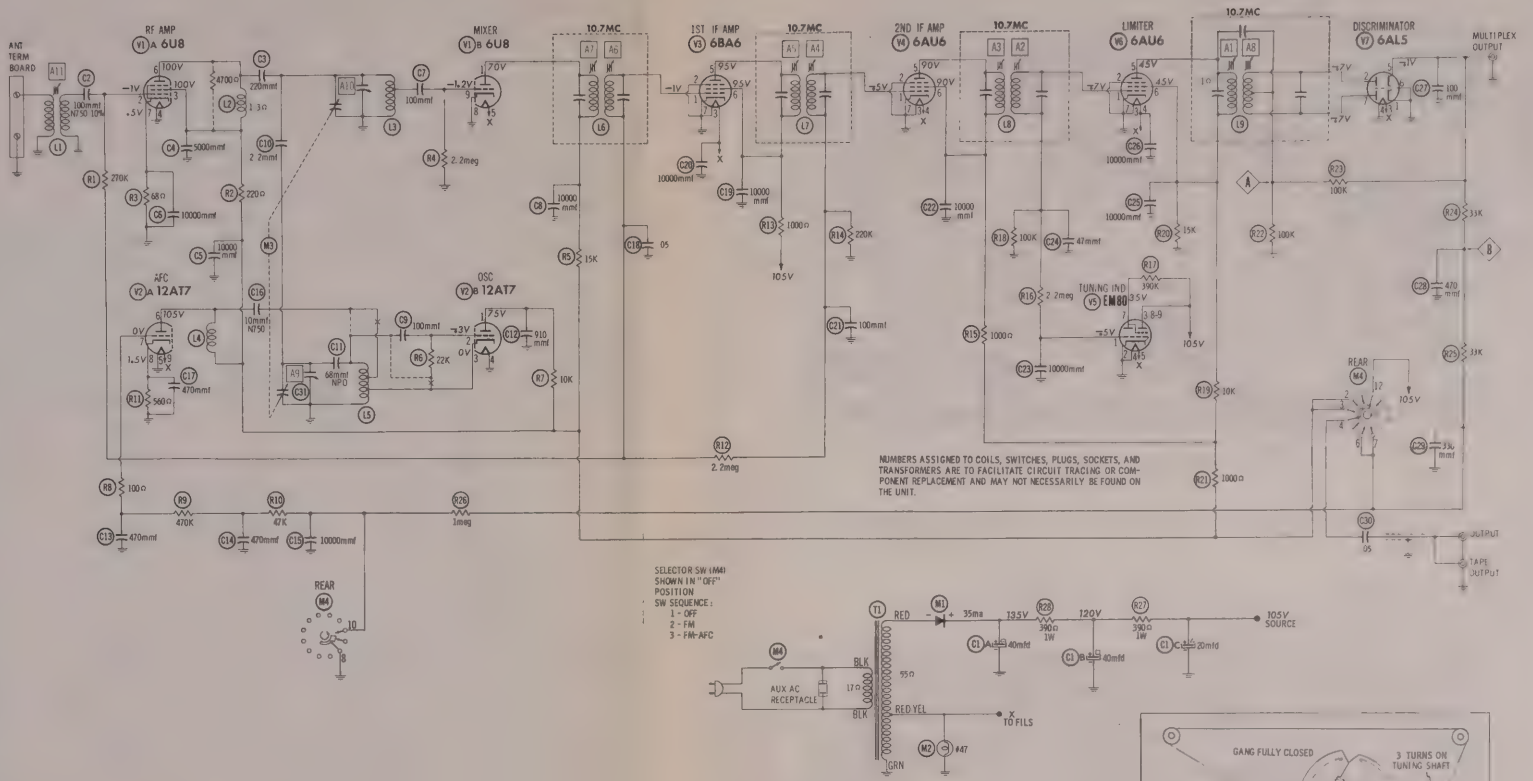
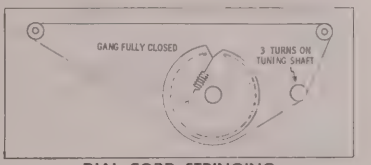


FIG. 2


ANT TERM BOARD
RF AMP V1A 6U8
MIXER V1B 6U8
10.7MC
1ST IF AMP V3 6BA6
2ND IF AMP V4 6AU6
LIMITER V6 6AU6
DISCRIMINATOR V7 6AL5
MULTIPLEX OUTPUT
AFC V2A 12AT7
OSC V2B 12AT7
TUNING IND V5 EM80
REAR
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.
OUTPUT
TAPE OUTPUT



DIAL CORD STRINGING

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. No signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6U8	†16K	2.7meg	†1000Ω	0Ω	1Ω	†1000Ω	68Ω	0Ω	2.2meg
V2	12AT7	†11K	22K	0Ω	0Ω	0Ω	†800Ω	515K ≈ 1.6meg	560Ω	.1Ω
V3	6BA6	2.4meg	0Ω	0Ω	.1Ω	†1800Ω	†1800Ω	0Ω		
V4	6AU6	220K	0Ω	0Ω	1Ω	†2800Ω	†2800Ω	0Ω		
V5	EM80 6BR5	2.3meg	0Ω	†800Ω	0Ω	1Ω	NC	†390K	†800Ω	†800Ω
V6	6AU6	100K	0Ω	0Ω	1Ω	†12K	†12K	0Ω		
V7	6AL5	0Ω	100K	.1Ω	0Ω	160K	0Ω	100K		

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION.
≈ MEASURED IN "FM-AFC" POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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LAFAYETTE MODEL LT-70

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

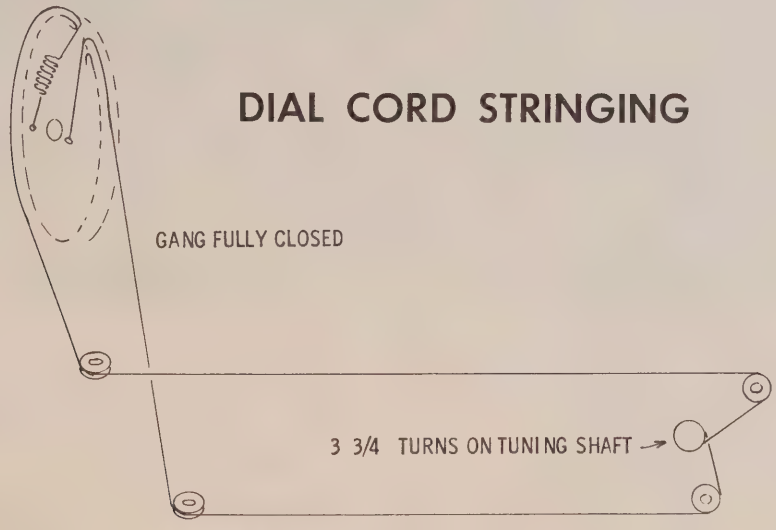
MAGNAVOX CHASSIS 52-01, 52-02, 52-03

MAGNAVOX CHASSIS
52-01, 52-02, 52-03

TRADE NAME	Magnavox Chassis 52-01, 52-02, 52-03
MANUFACTURER	Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Indiana
TYPE SET	FM-AM 10 Tube Tuner
POWER SUPPLY	Chassis 52-01 and 52-02: Externally Powered; Chassis 52-03: 110-120 Volts AC, 60 Cycles
RATING	24 Watts, .23 Amp. @ 117 Volts AC (Ch. 52-01, 52-02); 75 Watts, .7 Amp. @ 117 Volts AC (Ch. 52-03)
TUNING RANGE	BROADCAST 540 - 1620KC FREQ. MOD. 88 - 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE SIMILAR COLLARO CONQUEST - PHOTOFACT SET 390 FOLDER 5

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis.	455KC (400∿ Mod.)	AM	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	455KC (10KC Mod.)	"	"	"	A5	Adjust for MINIMUM output.
3.	10mmf	High side to AM antenna terminal. Low side to chassis.	1600KC (400∿ Mod.)	"	1600KC	"	A6	Adjust for maximum output.
4.	"	"	1400KC	"	Tune to 1400KC signal	"	A7, A8	"
5.	"	"	600KC	"	600KC	"	A9, A10, A11	Adjust for maximum output. Repeat steps 3, 4 and 5.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	.01mfd	High side to pin 5 (plate) of 6CY5 (V1). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe thru 1meg to point (A). Common to chassis.	A12, A13, A14, A15, A16	Adjust for maximum deflection.
7.	"	"	"	"	"	DC probe thru 1meg to point (B). Common to chassis.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.	.01mfd	High side to pin 5 (plate) of 6CY5 (V1). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. thru 1meg to point (A). Low side to chassis.	A12, A13, A14, A15, A16	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
7.	"	"	"	"	"	Vert. Amp. thru 1meg to point (B). Low side to chassis.	A17	Reconnect stabilizing capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A12 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Two 150Ω Carbon Resistors	To FM antenna terminals with 150Ω in each side.	107MC (Unmod.)	FM	107MC	DC probe thru 1meg to point (A). Common to chassis.	A18, A19, A20	Adjust for maximum deflection.
9.	"	"	89MC	"	89MC	"	A21	Adjust for maximum deflection. Repeat steps 8 and 9.

FIG. 1

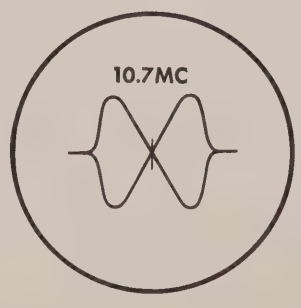
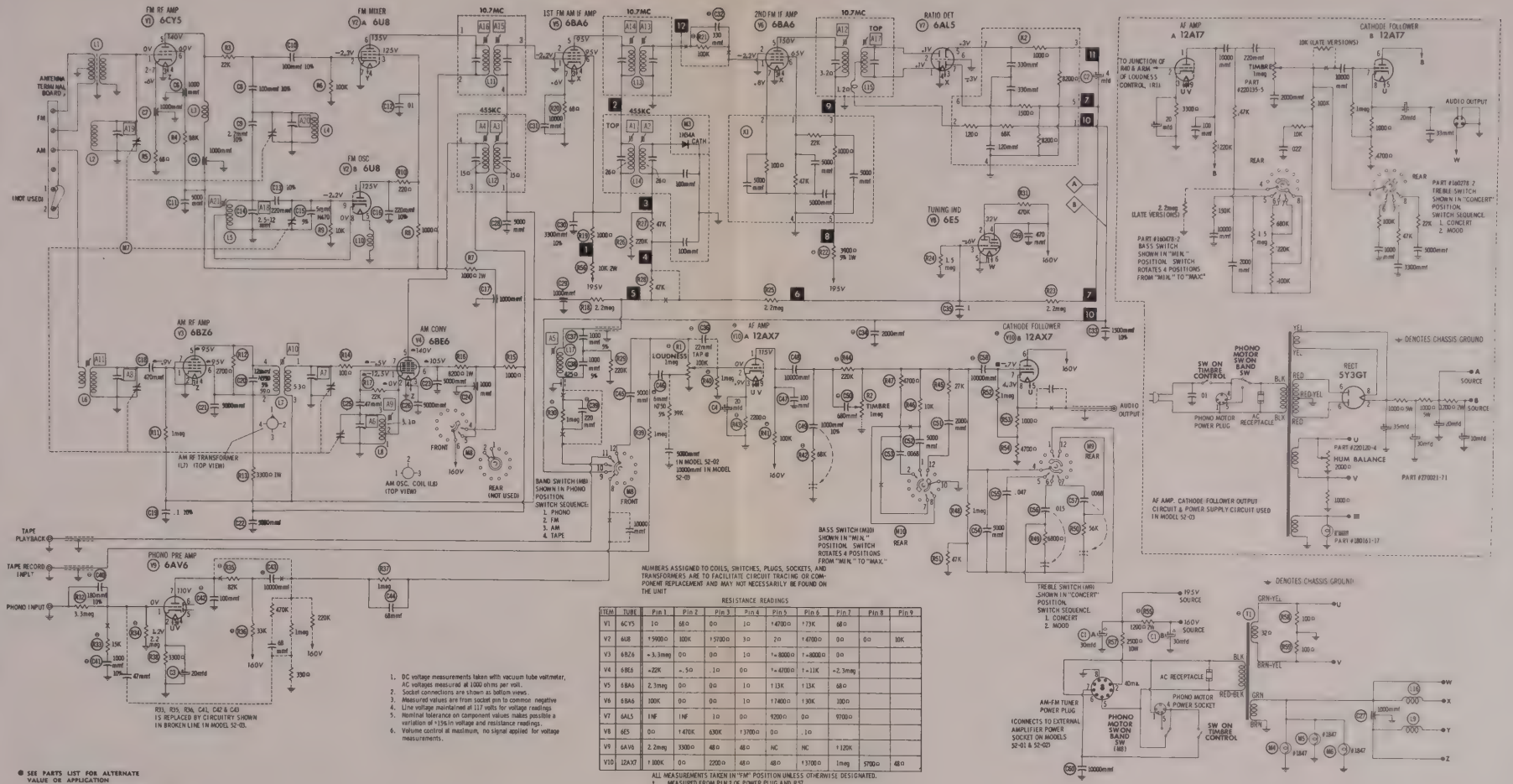


FIG. 2


FM RF AMP V1 6CY5
FM MIXER V2A 6U8
FM OSC V2B 6U8
10.7MC
1ST FM AM IF AMP V5 6BA6
455KC
2ND FM IF AMP V6 6BA6
RATIO DET V7 6AL5
TUNING IND V8 6E5
AF AMP A 12AT7
CATHODE FOLLOWER B 12AT7
AM RF AMP V3 6BZ6
AM CONV V4 6BE6
AM OSC. COIL (L8) (TOP VIEW)
AM RF TRANSFORMER (L7) (TOP VIEW)
AF AMP V10A 12AX7
CATHODE FOLLOWER V10B 12AX7
PHONO PRE AMP V9 6AV6
ANTENNA TERMINAL BOARD
TAPE PLAYBACK
TAPE RECORD (MPL)
PHONO INPUT
AUDIO OUTPUT
BAND SWITCH (M8) SHOWN IN PHONO POSITION. SWITCH SEQUENCE: 1. PHONO 2. FM 3. AM 4. TAPE
BASS SWITCH (M10) SHOWN IN "MIN." POSITION. SWITCH ROTATES 4 POSITIONS FROM "MIN." TO "MAX."
TREBLE SWITCH (M9) SHOWN IN "CONCERT" POSITION. SWITCH SEQUENCE. 1. CONCERT 2. MOOD
PART #160478-2 BASS SWITCH SHOWN IN "MIN." POSITION. SWITCH ROTATES 4 POSITIONS FROM "MIN." TO "MAX."
PART #160778-2 TREBLE SWITCH SHOWN IN "CONCERT" POSITION. SWITCH SEQUENCE. 1. CONCERT 2. MOOD
AF AMP. CATHODE FOLLOWER OUTPUT CIRCUIT & POWER SUPPLY CIRCUIT USED IN MODEL 52-03
DENOTES CHASSIS GROUND
RECT 5Y3GT
SW ON TIMBRE CONTROL
PHONO MOTOR SW ON BAND SW
PHONO MOTOR POWER PLUG
AC RECEPTACLE
HUM BALANCE
PART #270021-71
PART #180161-17
PART #220120-4
AM-FM TUNER POWER PLUG (CONNECTS TO EXTERNAL AMPLIFIER POWER SOCKET ON MODELS 52-01 & 52-02)
PHONO MOTOR & POWER SOCKET
R35, R35, R34, C41, C42 & C43 IS REPLACED BY CIRCUITRY SHOWN IN BROKEN LINE IN MODEL 52-03.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CY5	1Ω	68Ω	0Ω	1Ω	↑4700Ω	↑73K	68Ω		
V2	6U8	↑5900Ω	100K	↑5700Ω	3Ω	2Ω	↑4700Ω	0Ω	0Ω	10K
V3	6BZ6	∞3.3meg	0Ω	0Ω	1Ω	↑∞8000Ω	↑∞8000Ω	0Ω		
V4	6BE6	∞22K	∞.50	.1Ω	0Ω	↑∞4700Ω	↑∞11K	∞2.3meg		
V5	6BA6	2.3meg	0Ω	0Ω	1Ω	↑13K	↑13K	68Ω		
V6	6BA6	100K	0Ω	0Ω	1Ω	↑74Ω0Ω	↑30K	100Ω		
V7	6AL5	1MF	1MF	1Ω	0Ω	9200Ω	0Ω	9700Ω		
V8	6E5	0Ω	↑470K	630K	↑3700Ω	0Ω	.1Ω			
V9	6AV6	2.2meg	3300Ω	48Ω	48Ω	NC	NC	↑120K		
V10	12AX7	↑100K	0Ω	2200Ω	48Ω	48Ω	↑3700Ω	1meg	5700Ω	48Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
↑ MEASURED FROM PIN 2 OF POWER PLUG AND R57.
∞ MEASURED IN "AM" POSITION.
● MEASURED FROM PIN 8 OF V10.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CircuiTrace

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MAGNAVOX CHASSIS 52-01, 52-02, 52-03

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amplifier	6CY5	
V2	FM Mixer - FM Osc.	6U8	
V3	AM RF Amplifier	6BZ6	
V4	AM Converter	6BE6	
V5	1st FM - AM IF Amp.	6BA6	
V6	2nd FM IF Amplifier	6BA6	
V7	Ratio Detector	6AL5	
V8	Tuning Indicator	6E5	
V9	Phono Preamplifier	6AV6	
V10	AF Amp. - Cath. Follower	12AX7	Note 1

Note 1. Some versions may use 12AT7 in this application.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲30	450	270021-58	AFH2-54	B0430	FP237	TMD-52	D-225	TVL-2759
B	▲30	450							
C2	4	50	270027-27	PRS150V4	BBR4-50	TT50X5	TD-4-50	MT-0504	TVA-1402
C3	20	25	270027-28	PRS50V20	BBR20-25	TT25X20	TD-25-25	MT-0220	TE-1206
C4	20	25	270027-28	PRS50V20	BBR20-25	TT25X20	TD-25-25	MT-0220	TE-1206

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	1000		250276-1	EF-001	MFT-1000			503C-D1	
C6	1000		250276-2	EF-001	MFT-1000			503C-D1	
C7	1000		250276-2	EF-001	MFT-1000			503C-D1	
C8	100		250187-53	1469-0001	DD-101	22R5T1	MCB235	MS-31	10%
C9	2.2		250221-118	NPO-SI 2.2	TCZ-2R2	CTA6V227		5TCCB-V22	10%
C10	100		250187-53	1469-0001	DD-101	22R5T1	MCB235	MS-31	10%
C11	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C12	.01	400	250211-7	P488N-01	D6-103	CUB4S1	GEM-4I1	4TM-P1	
C13	220		250218-5	1469-00022	MD-221	22R5T22		MS-322	10%
C14	2.5-12		250188-9						
C15	5		250088-138						N470 5%
C16	220		250187-57	1469-00022	MD-221	22R5T22		MS-322	10%
C17	1000		250276-1	EF-001	MFT-1000			503C-D1	
C18	470		250159-102	1468-00047	DD-471	5W5T47		1FM-347	
C19	.1	100	250261-125				GEM-201		10%
C20	12		250088-179						N330 5%
C21	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C22	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C23	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C24	1000		250276-1	EF-001	MFT-1000			503C-D1	
C25	47		250218-17	BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	
C26	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C27	1000		250276-1	EF-001	MFT-1000			503C-D1	
C28	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C29	1000		250276-1	EF-001	MFT-1000			503C-D1	
C30	3300		250234-154						10%
C31	10000		250234-66	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C32	330		250207-49	SI 330	D6-331	LT6T33	UC-5333	5GA-T33	①
C33	1500		250234-146						10%
C34	2000		250218-20	BPD-002	DD-202	BYA10D2	DC522	5HK-D2	②
C35	.1	200	250202-13	P288N-1	DF-104	BC2P1J	ACE401	2SE-P10	
C36	22		250218-1	SI 22	D6-220	L10Q22	UC-5422	5GA-Q22	①
C37	1000		250228-354	1464-001		1R5D1	MCB255	MS-21	5%
C38	1000		250228-354	1464-001		1R5D1	MCB255	MS-21	5%
C39	220		250218-5	BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	③
C40	180		250175-40	DI 180	DD-181	L10T18			10% ④
C41	1000		250218-8	DI 1000					③ ⑤
C42	100		250218-22	BPD-0001	DD-101	L10T1	UC-531	5GA-T1	⑥
C43	10000		250218-19	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	③
C44	68		250218-7	BPD-000068	DD-680	L10Q68	UC-5468	5GA-Q68	
C45	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C46	5								N750 5% ⑦
C47	100		250218-22	BPD-0001	DD-102	L10T1	UC-531	5GA-T1	
C48	10000		250218-19	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C49	1000		250218-8						10%
C50	680		250218-4	BPD-00068	DD-681	L10T68	UC-5368	5GA-T68	③ ⑧
C51	2000		250218-20	BPD-002	DD-202	BYA10D2	DC522	5HK-D2	
C52	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C53	.0068	400	250211-6	P488N-0068	D6-682	CUB6D68	GEM-6268	6TM-D68	
C54	5000		250175-30	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C55	.047	200	250202-11	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C56	.015	200	250202-8	P288N-015	DD16-153	CUB2S15	GEM-4115	4TM-S15	
C57	.0068	400	250211-6	P488N-0068	D6-682	CUB6D68	GEM-6268	6TM-D68	
C58	10000		250218-19	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	⑨
C59	470		250218-6	BPD-00047	DD-471	L10T47	UC-5347	5GA-47	
C60	10000	1400	250219-2	DAC-27	DD16-103	HVE16S1		20HKB-S1	

① Not used in some versions.
② Chassis 52-02 uses 1000mmf in this application (Part #250218-8). Not used in 52-03.
③ Not used in Chassis 52-03.
④ Chassis 52-02 uses 68mmf in this application (Part #250218-7). Chassis 52-03 uses 330mmf (Part #250207-49).
⑤ Chassis 52-02 uses 470mmf in this application (Part #250218-6).
⑥ Chassis 52-02 uses 47mmf in this application (Part #250218-17).
⑦ Some versions of Chassis 52-01 may use 5mmf in this application (Part #250207-1). Chassis 52-02 uses 33mmf (Part #250218-21). Chassis 52-03 uses 47mmf (Part #250218-17).
⑧ Chassis 52-02 uses 1000mmf in this application (Part #250218-7).
⑨ Some versions may use 5000mmf in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	220074-14	BT-7417	A47F3-1meg	Q18-137X	UT-440	Loudness, Tap ② 100K ①
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	1meg	½	220135-5				PP16A	Timbre
B	Switch						Not Req.	Push-Pull

① Part #220074-15 used in Chassis 52-03.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	MAGNAVOX PART No.	NOTES
R3	22Ω		230104-42	
R4	68K		230104-84	
R5	68Ω		230104-48	
R6	100K		230104-86	
R7	1000Ω	1	230105-62	
R8	1000Ω		230104-62	
R9	10K		230104-74	
R10	220Ω		230104-54	
R11	1meg		230104-98	
R12	2700Ω		230104-67	
R13	3300Ω	1	230105-68	
R14	100Ω		230104-50	
R15	1000Ω		230104-62	
R16	8200Ω	1	230105-73	
R17	22K		230104-78	
R18	2.2meg		230104-102	
R19	1000Ω		230104-62	
R20	68Ω		230104-42	
R21	100K		230104-86	Note 1
R22	3900Ω 5%	1	230105-69	Note 2
R23	2.2meg		230104-102	
R24	1.5meg		230104-100	
R25	2.2meg		230104-102	
R26	220K		230104-90	

ITEM No.	RATING OHMS	RATING WATT	MAGNAVOX PART No.	NOTES
R27	47K		230104-82	
R28	47K		230104-82	
R29	220K		230104-90	
R30	1meg		230104-98	Note 3
R31	470K		230104-94	
R32	3.3meg		230104-104	
R33	15K		230104-76	Notes 3 & 4
R34	2.2meg		230104-102	Notes 5 & 13
R35	82K		230104-85	Notes 3 & 6
R36	33K		230104-80	Notes 6 & 8
R37	1meg		230104-98	
R38	3300Ω		230104-68	
R39	1meg		230104-98	
R40	1meg		230104-98	Note 7
R41	100K		230104-86	Note 8
R42	68K		230104-84	Note 9
R43	2200Ω		230104-66	Note 10
R44	220K		230104-90	Note 11
R45	27K		230104-79	
R46	10K		230104-74	
R47	4700Ω		230104-70	
R48	1meg		230104-98	
R49	6800Ω		230104-72	
R50	56K		230104-83	

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	MAGNAVOX PART No.	NOTES
R51	47K		230104-82	
R52	1meg		230104-98	
R53	1000Ω		230104-62	
R54	4700Ω		230104-70	
R55	1200Ω	2	230106-1053	Note 12
R56	10K	2	230106-1074	
R57	2500Ω	10	240071-39	
R58	100Ω		230104-50	
R59	100Ω		230104-50	

Note 1. Not used in some versions.
Note 2. Chassis 52-03 uses 8200Ω 2W in this application (Part #230104-1073).
Note 3. Not used in Chassis 52-03.
Note 4. Chassis 52-02 uses 33K in this application (Part #230104-80).
Note 5. Chassis 52-02 uses 1meg in this application (Part #230104-98).
Note 6. Chassis 52-02 uses 47K in this application (Part #230104-82).
Note 7. Chassis 52-03 uses 470K in this application (Part #230104-94).
Note 8. Chassis 52-03 uses 220K in this application (Part #230104-90).
Note 9. Not used in Chassis 52-02.
Note 10. Chassis 52-03 uses 3300Ω in this application (Part #230104-68).
Note 11. Chassis 52-02 uses 330K in this application (Part #230104-92).
Note 12. Some versions may use 1000Ω 2W in this application.
Note 13. Chassis 52-03 uses 6.8meg in this application (Part #230104-108).

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MAGNAVOX PART No.	REPLACEMENT DATA
K1	Audio Circuit	5000mmf, 5000mmf, 5000mmf, 5000mmf, 100Ω, 1000Ω, 22K, 47K	250255-1	
K2	Audio Circuit	120mmf, 330mmf, 330mmf, 120Ω, 1000Ω, 1500Ω, 8200Ω, 8200Ω, 68K	250254-1	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Ant. Trans.	360491-4					
L2	FM Ant. Coil	360750-1					
L3	RF Choke	360622-9					
L4	FM RF Coil	360751-1					
L5	FM Osc. Coil	360628-1					
L6	Loopstick	360746-1					
L7	AM RF Trans.	360653-1					
L8	AM Osc. Coil	360752-1					
L9	Fil. Choke	360622-9					
L10	Fil. Choke	360622-9					
L11	1st FM IF	360626-1	16-3487	FM-254	1463		
L12	1st AM IF	360611-1	16-6758	BC-352	12-C1	RF-1	
L13	2nd FM IF	360747-1	16-3490		1463-PC		
L14	2nd AM IF	360749-1					
L15	Ratio Detector	360748-1			1465-PC		
L16	Fil. Choke	360622-9					
L17	10KC Filter	360621-1					

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA: MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .23A	6.3V @ .57A	6.3V @ 2.7A	320076-1 ②	F5905 ①	P-2961 ①			26F63 ①	F-32A ①

① Drill new mounting hole.

② Part #300166-1 used in Chassis 52-03.

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: MAGNAVOX PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	REMARKS
M1		89-TB				

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA: MAGNAVOX PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M2		† JPS-39 or †♦ JPS-39SD or ♦ JPS-39D	† W-41TPS or †♦ W-41DS or ♦ W-41TPD	† Jewel ♦ Diamond

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: MAGNAVOX PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M3	1N34A	530049-1	1N34A	1N38A	AM Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MAGNAVOX PART No.	NOTES
M4	Lamp	180161-17	#1847
M5	Lamp	180161-17	#1847
M6	Lamp	180161-17	#1847
M7	Tuning Cap.	260147-1	6 Gang (AM Sections: Ant. 28-322mmf, RF 15-280mmf, Osc. 22-151mmf
M8	Switch	160284-3	Band, Rotary, Wafer Type
M9	Switch	160278-2	Treble, Rotary, Wafer Type
M10	Switch	160478-2	Bass, Rotary, Wafer Type
	Printed Board	210023	

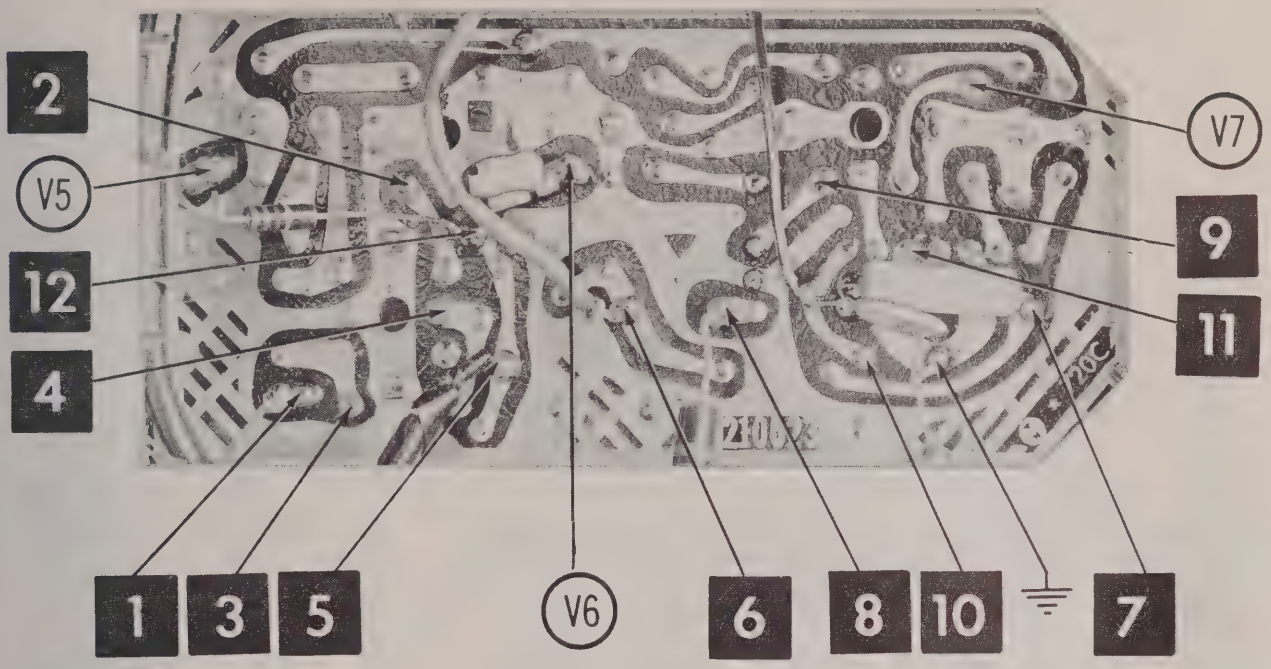
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



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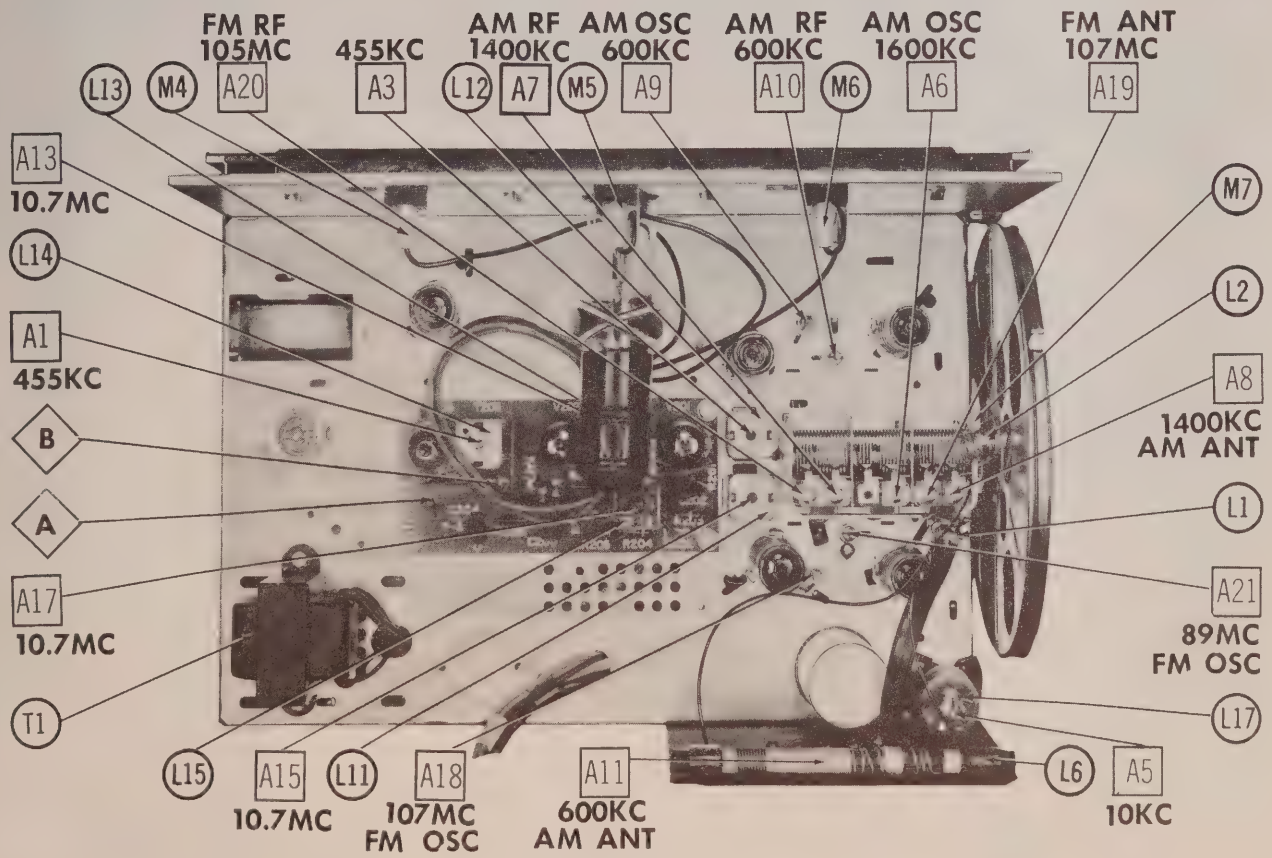
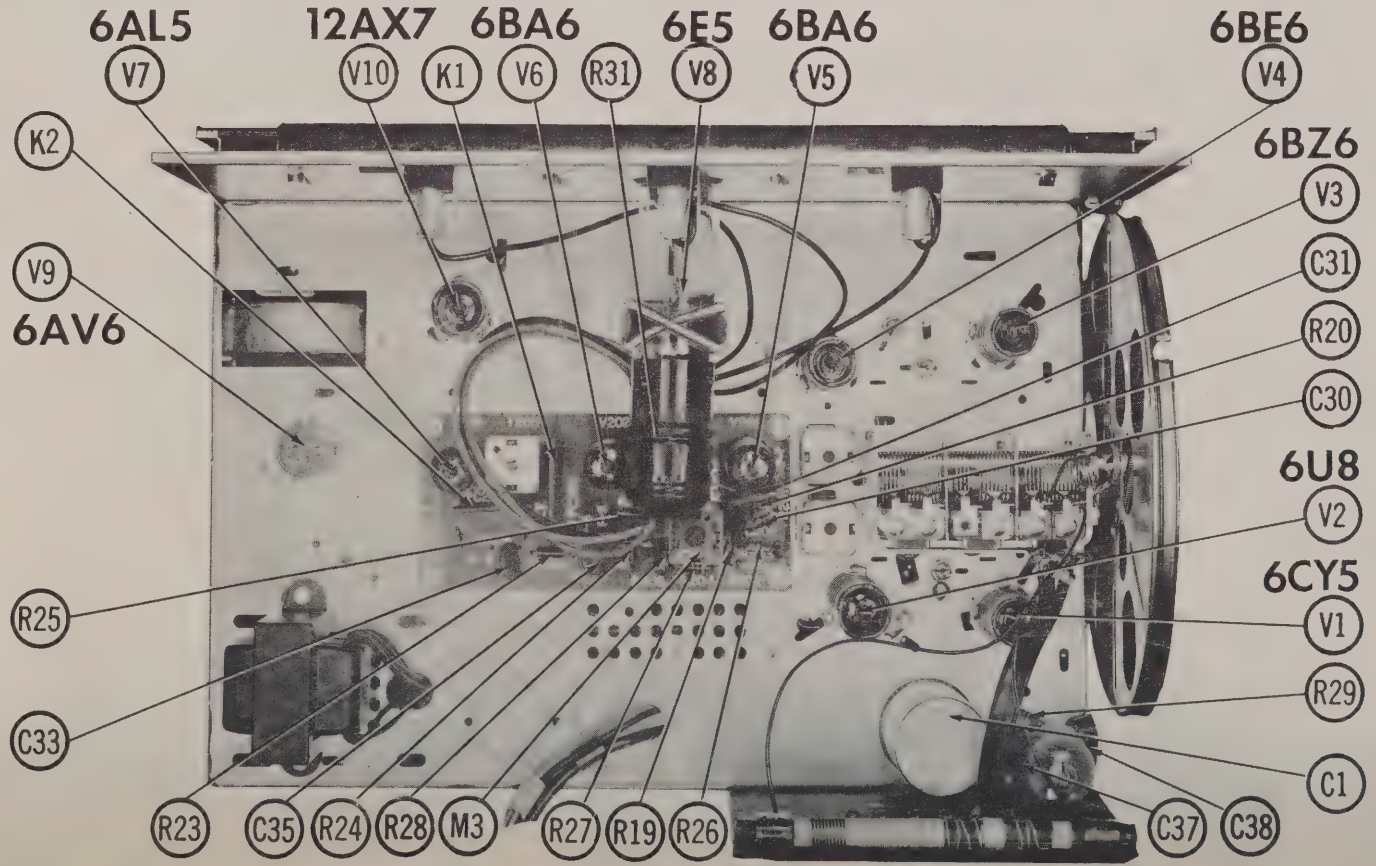
PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



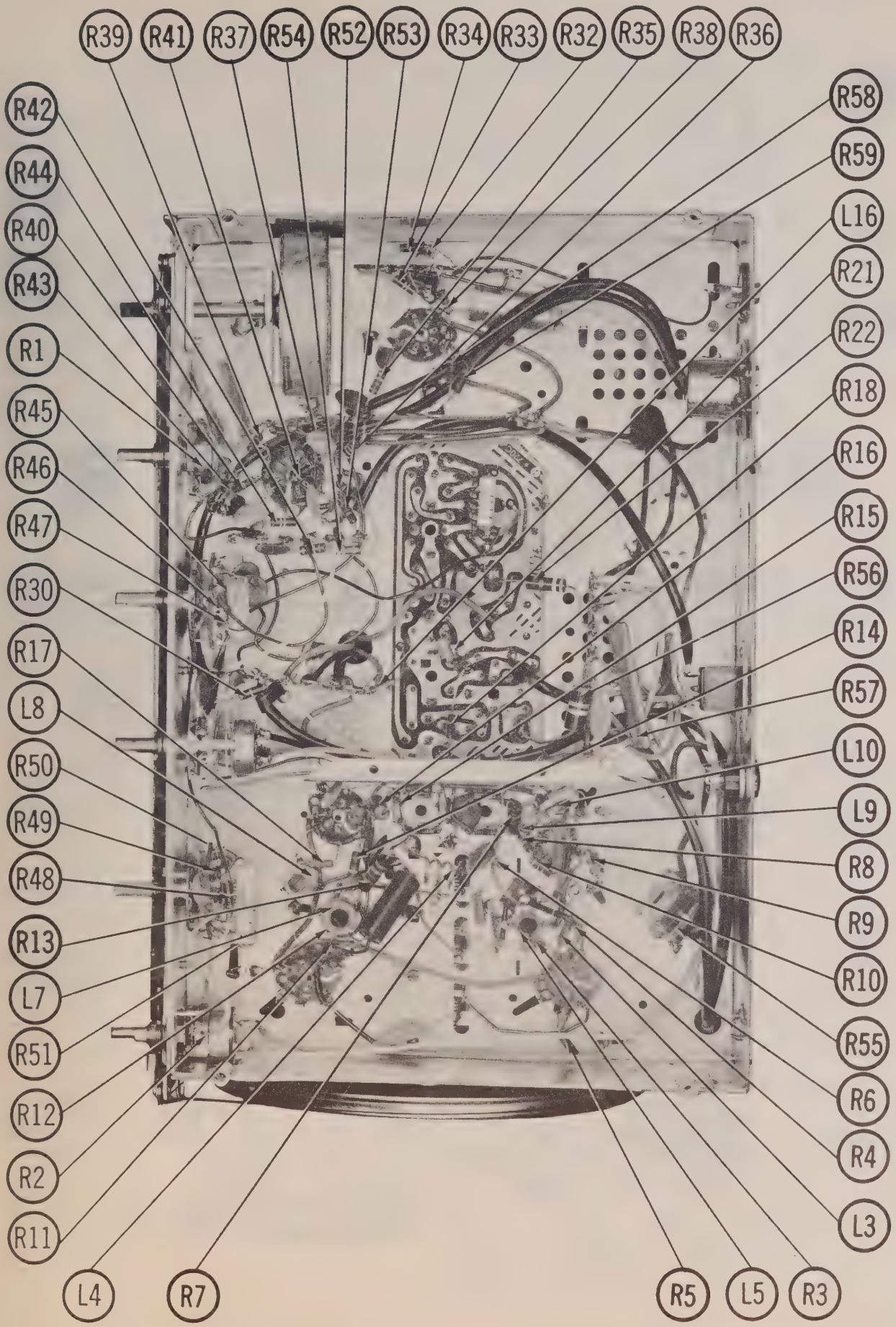
CHASSIS TOP VIEW - ALIGN, INDUCTOR, & MISC IDENT



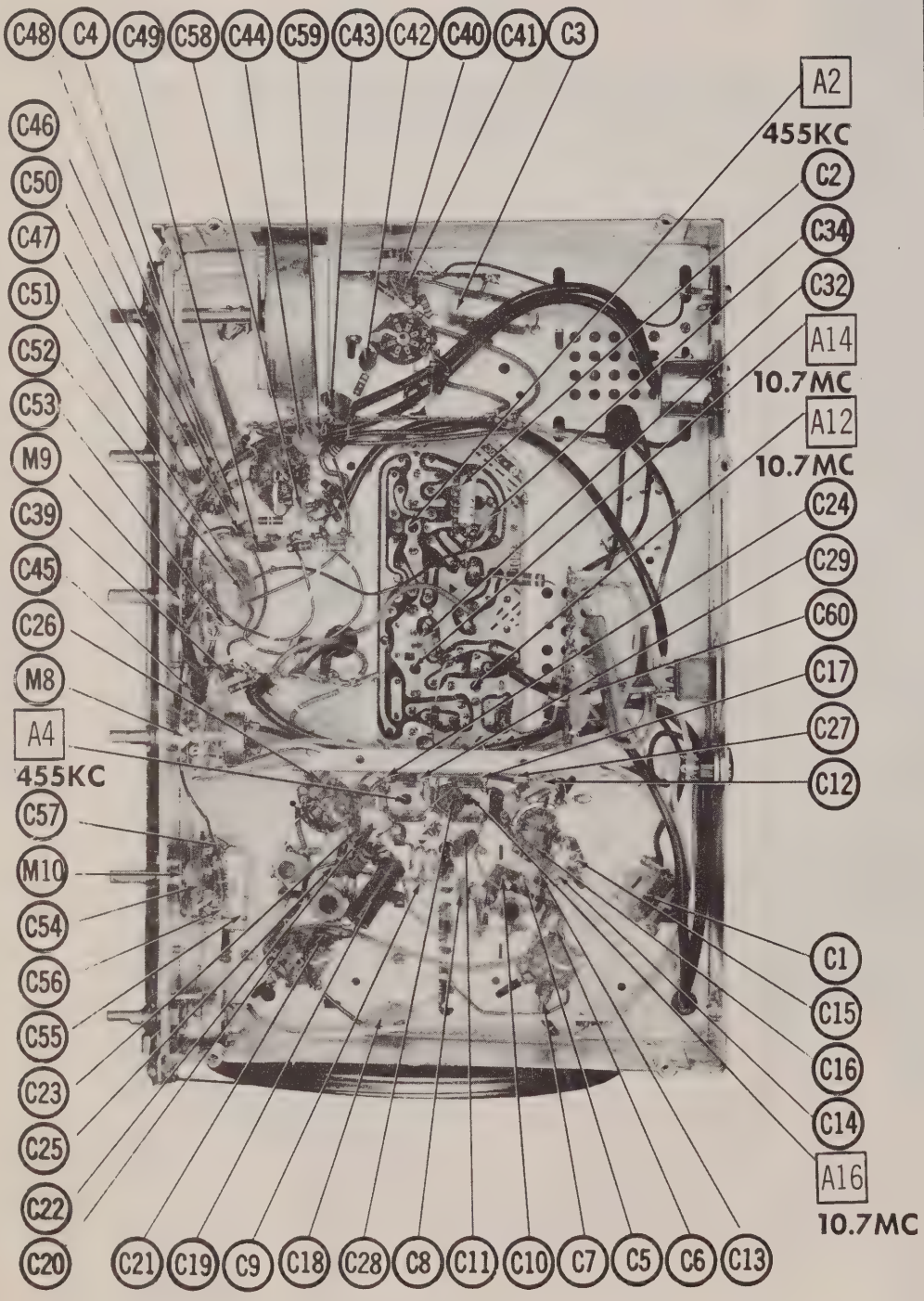
CHASSIS TOP VIEW

CHASSIS 52-01

MAGNAVOX



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT

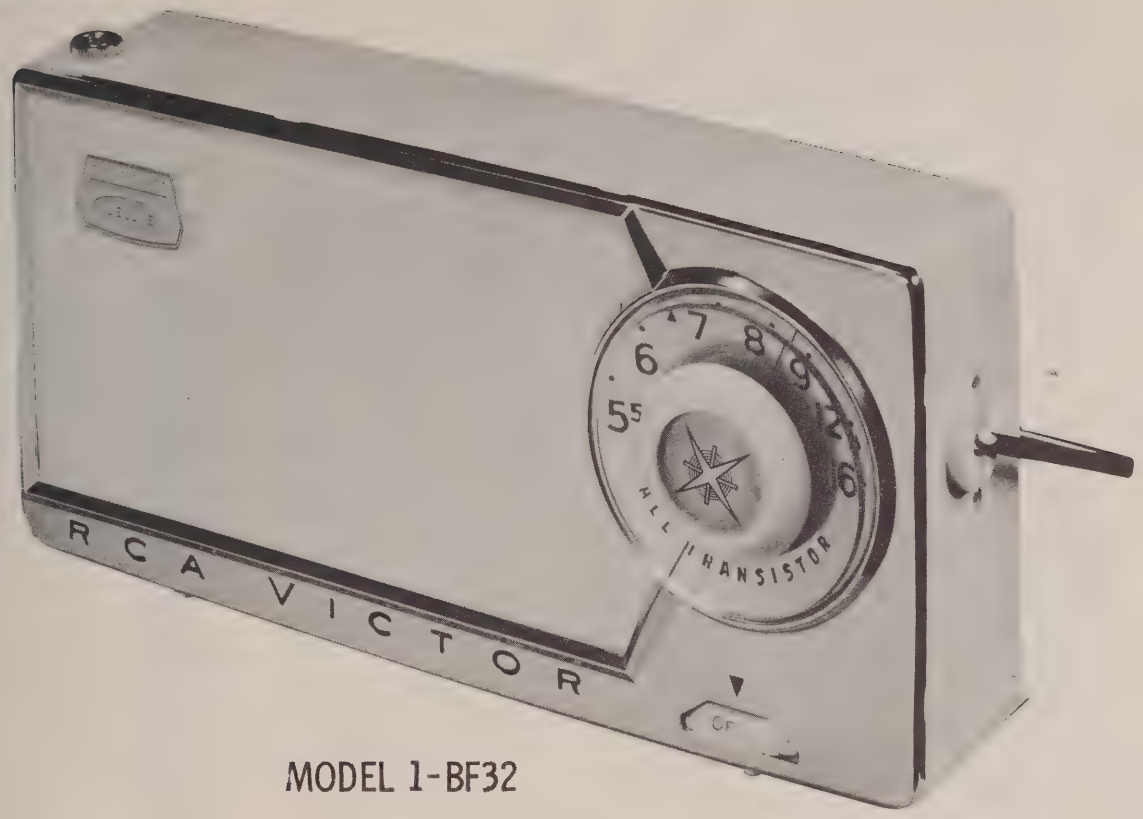


CHASSIS BOTTOM VIEW
CAPACITOR, MISC, & ALIGN IDENT

PHOTOFACT* Folder with CIRCUITRACE*

RCA VICTOR MODELS 1BT32, 1BT34, 1BT36, BC3, BCS4, RK222 (Ch. RC-1187A)

RCA VICTOR MODELS 1BT32, 1BT34, 1BT36, BC3, BCS4, RK222 (Ch. RC-1187A)



MODEL 1-BF32

RCA VICTOR MODELS 1BT32, 1BT34, 1BT36, BC3, BCS4, RK222 (Ch. RC-1187A)

TRADE NAME	RCA Victor Models 1-BT-32, 1-BT-34, 1-BT-36 (CH. RC-1187A); BC-3 (or) RK-222 Battery Charger, BCS-4 Battery Charger/Speaker
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N. J.
TYPE SET	Battery Operated Portable Transistorized Receiver
POWER SUPPLY	6 Volts DC — RATING: 10MA@6 Volts DC (No Signal, Min. Volume)
TUNING RANGE-BROADCAST	540 - 1600KC — SHORT WAVE: 11.5MA@6 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1, A2, A3, A5.....GENERAL CEMENT #5009, 8195, 8274, 8275, 8282, 8728, 8987, 8988
WALSCO #2515, 2531, 2532
A4, A6.....GENERAL CEMENT #5000, 5003, 5009, 8276, 8290
WALSCO #2515, 2520, 2523, 2525, 2537

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to #2 terminal of antenna rod. Low side to B-.	455KC (400~ Mod.)	Point of non-interference near high end.	Across voice coil	A1, A2, A3	Adjust for maximum output.
2.	"	Loop	1620KC	Tuning gang fully open	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	"	600KC	Tune to 600KC signal	"	A5	"
4.	"	"	1400KC	1400KC	"	A6	Adjust for maximum output while rocking tuning gang. Repeat steps 2, 3, & 4.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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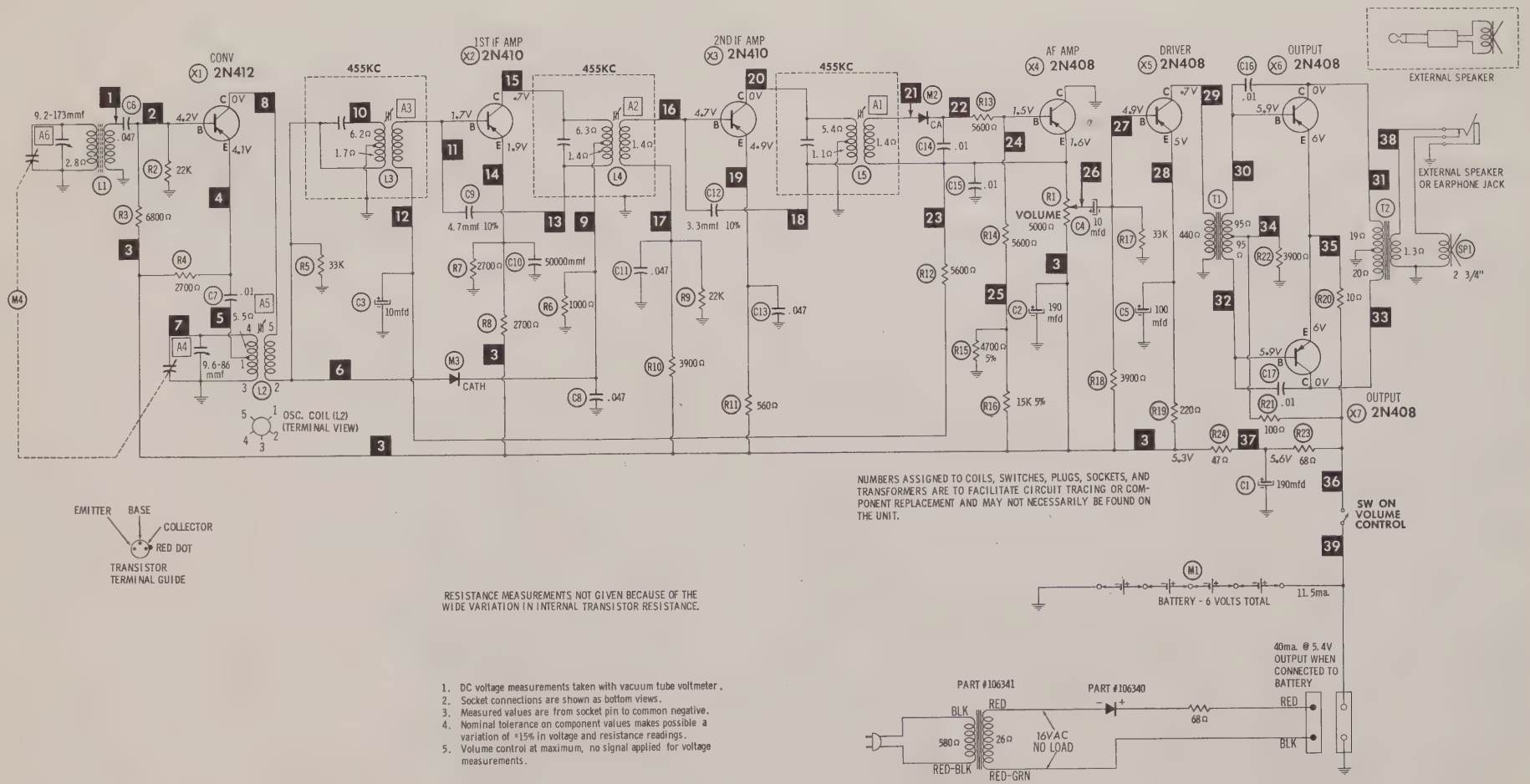

EMITTER BASE COLLECTOR RED DOT

TRANSISTOR TERMINAL GUIDE

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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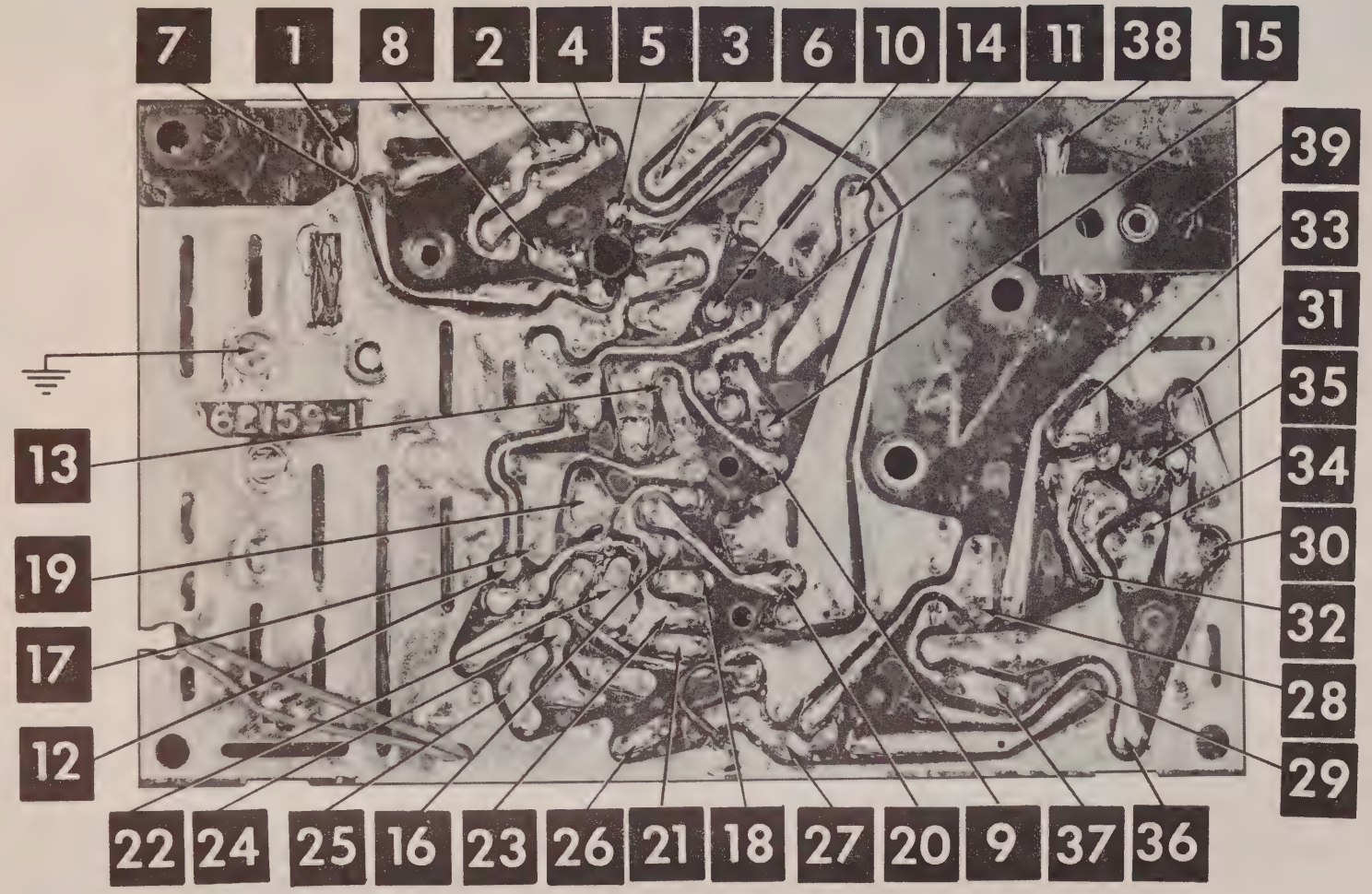
RCA VICTOR MODELS 1BT32, 1BT34, 1BT36, BC3, BCS4, RK222 (Ch. RC-1187A)



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PARTS LIST & DESCRIPTION (continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	500Ω CT	12Ω	106405	GH103			TA-21	TR-18		

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP1	2 3/4"	PM	12Ω	106400		① Part of BCS-4 Battery Charger/Speaker Unit
	4"	PM	12Ω	106545 ①		

BATTERIES

ITEM No.	VOLTAGE	RCA Victor PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	6V 4.8V	VS-034① or 106973③ (RCB-2)		Z ①		1015① E9 ②		M15R① ZM9 ②	① 4 Used ② Mercury Type, 4 Used ③ Rechargeable Unit

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		RCA Victor PART No.	CBS PART No.	SYLVANIA PART No.	
M2		101615	1N60	1N295	Detector (Pigtail)
M3		101615	1N60	1N295	Overload (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M4	Tuning Cap.	106415	2 Gang, Ant. 9.2-173mmf, Osc. 9.6-86mmf.
	Printed Board	106431	Assembly, Less Antenna, Brackets, Grommets, Speaker, Spacer, Tuning Cap, Transistors, Volume Control, Bracket, Earphone Jack, And Miscellaneous Hardware

CABINETS & CABINET PARTS

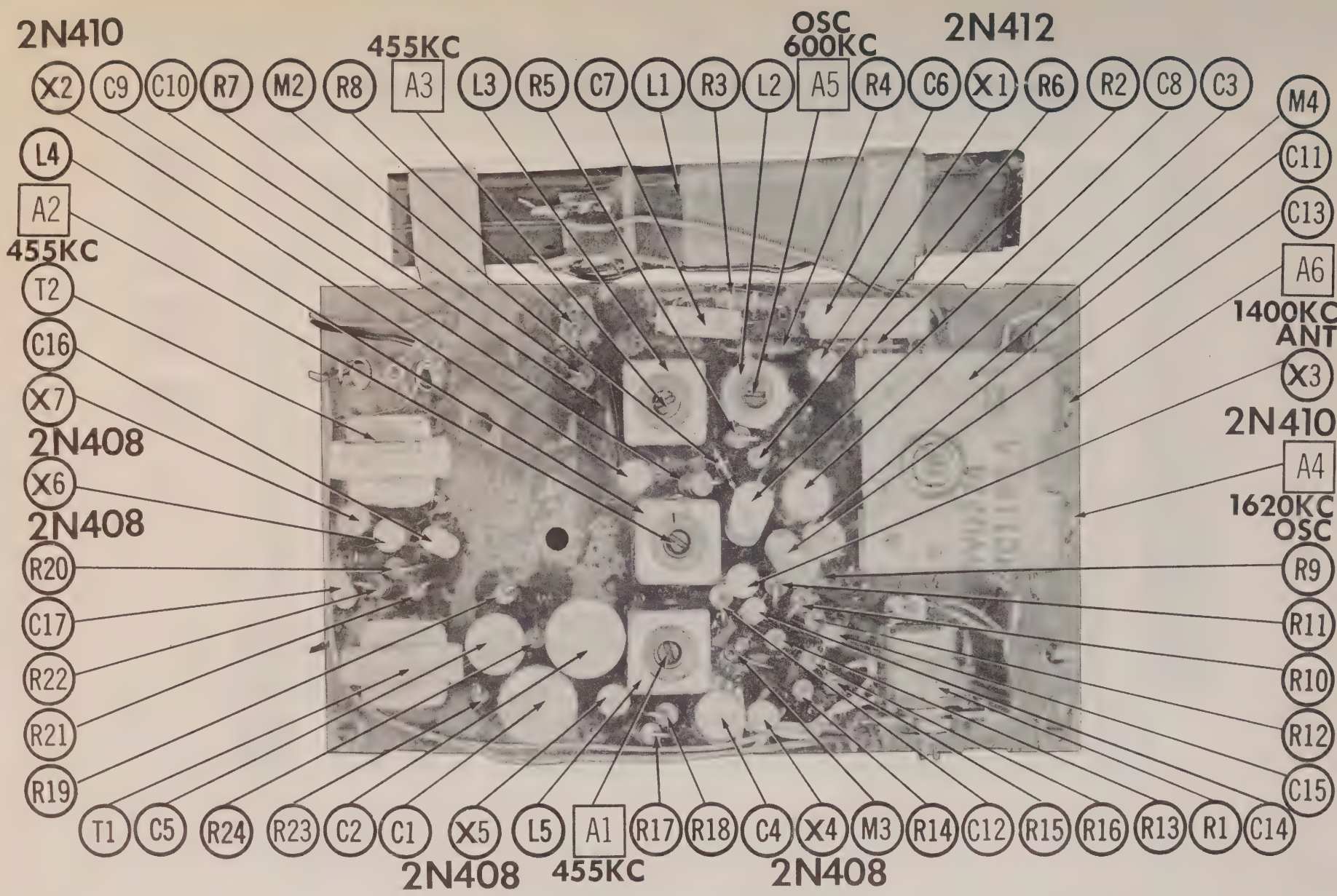
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	106420	Tuning, White, Models 1-BT-32, 1-BT-34
Knob	106421	Tuning, Gray, Model 1-BT-36
Knob	106417	Tuning Indicator, Includes Spring
Knob	106410	Volume-On-Off, White, Models 1-BT-32, 1-BT-34
Knob	106418	Volume-On-Off, Gray, Model 1-BT-36
Case	Y7017	Front And Back, White And Pink, Model 1-BT-32
Case	Y7018	Front And Back, White And Green, Model 1-BT-34
Case	Y7019	Front And Back, Gray And White, Model 1-BT-36
Handle	106422	

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

RCA VICTOR MODELS 1BT32, 1BT34, 1BT36, BC3, BC54, RK222 (Ch. RC-1187A)



CHASSIS TOP VIEW

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N412	Converter		2N412	2N486	2N412	PNP
X2	2N410	1st IF Amplifier		2N410	2N483	2N410	PNP
X3	2N410	2nd IF Amplifier		2N410	2N483	2N410	PNP
X4	2N408	AF Amplifier		2N408	2N363	2N408	PNP
X5	2N408	Driver		2N408	2N362	2N408	PNP
X6	2N408	Output		2N408	2N632	2N408	PNP } Matched
X7	2N408	Output		2N408	2N632	2N408	PNP }

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	190	10	106443	BCD-10190	ECPA221			VLS-1120*	
C2	190	10	106443	BCD-10190	ECPA221				
C3	10	10	103382	XPP-10010	NL10-10	PES-340	ML10-15	VL-1127	
C4	10	10	103382	XPP-10010	NL10-10	PES-340	ML10-15	VL-1127	
C5	100	10	106442	BCD-10100	NL100-10	PES-400	ML100-15	VL-1140	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	.047	50		106500	P285N-047	DF-503	ST-4S47	TA-150	2WF-S47	
C7	.01	50		106501	P285N-01	D6-103	ST-4S1	TA-110	2WF-S10	
C8	.047	50		106500	P285N-047	DF-503	ST-4S47	TA-150	2WF-S47	
C9	4.7		10%	102235	NPO-SI 4.7	TCZ-4R7	CTA6V47C	CNO-547	5TCCB-V47	
C10	50000			105715	BPD-05	DF-503		TA-150		
C11	.047	50		106500	P285N-047	DF-503	ST-4S47	TA-150	2WF-S47	
C12	3.3		10%	71503	NPO-SI 3.3	TCZ-3R3	CTA6V33C	CNO-533	5TCCB-V33	
C13	.047	50		106500	P285N-047	DF-503	ST-4S47	TA-150	2WF-S47	
C14	.01	50		106501	P285N-01	D6-103	ST-4S1	TA-110	2WF-S10	
C15	.01	50		106501	P285N-01	D6-103	ST-4S1	TA-110	2WF-S10	
C16	.01	50		106501	P285N-01	D6-103	ST-4S1	TA-110	2WF-S10	
C17	.01	50		106501	P285N-01	D6-103	ST-4S1	TA-110	2WF-S10	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4	106402					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R2	22K		502322	
R3	6800Ω		502268	
R4	2700Ω		502227	
R5	33K		502333	
R6	1000Ω		502210	
R7	2700Ω		502227	
R8	2700Ω		502227	
R9	22K		502322	
R10	3900Ω		502239	
R11	560Ω		502156	
R12	5600Ω		502256	
R13	5600Ω		502256	

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R14	5600Ω		502256	
R15	4700Ω 5%		502247	
R16	15K 5%		502315	
R17	33K		502333	
R18	3900Ω		502239	
R19	220Ω		502122	
R20	10Ω		502010	
R21	100Ω		502110	
R22	3900Ω		502239	
R23	68Ω		502068	
R24	47Ω		502048	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	106764					
L2	Osc. Coil	105726					
L3	1st IF Trans.	105723					
L4	2nd IF Trans.	105724					
L5	3rd IF Trans.	105725					

TRANSFORMER (DRIVER)

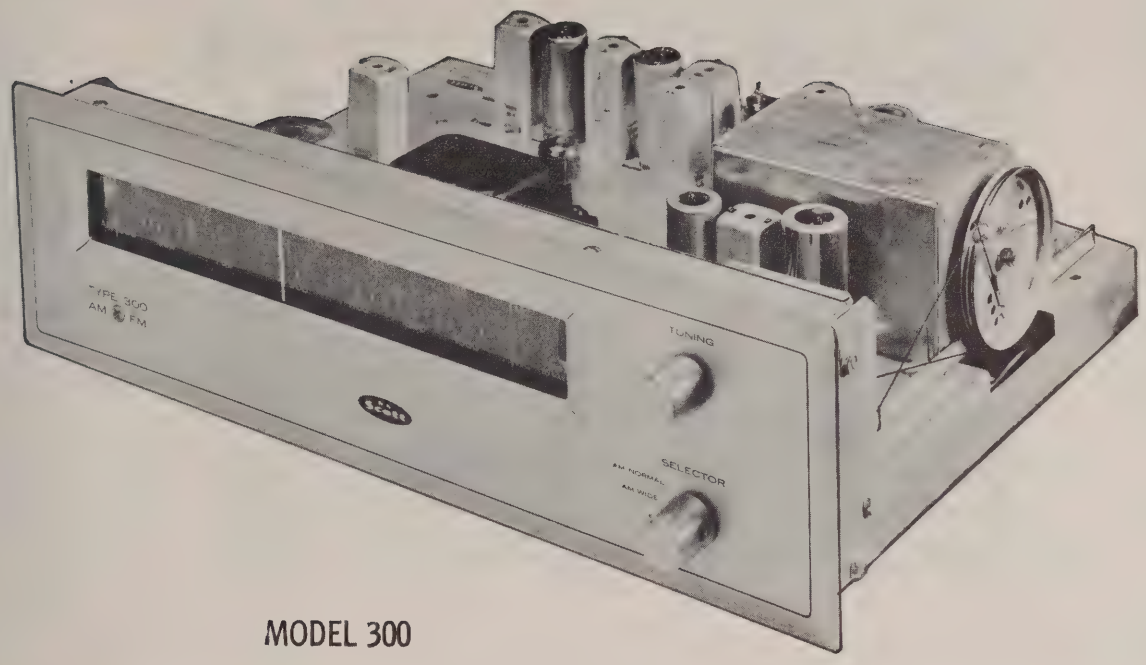
ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.2	: 1	106406						

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

H. H. SCOTT
MODELS 300, 300A

H. H. SCOTT
MODELS 300, 300A

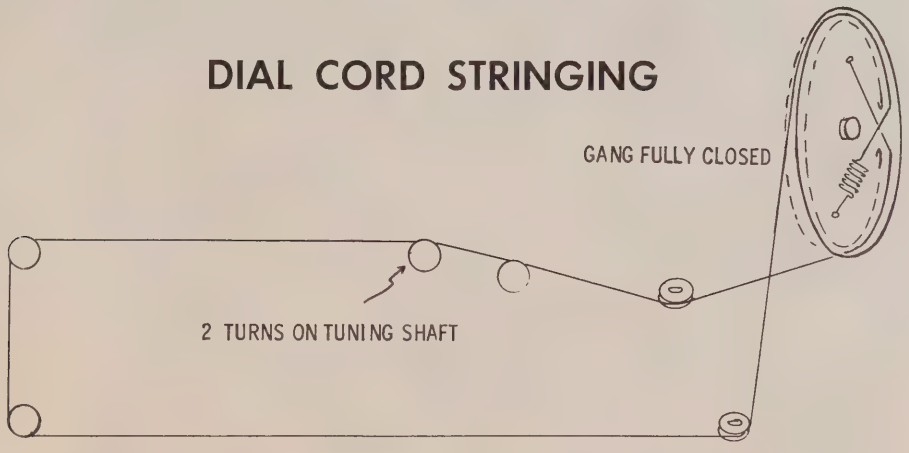


MODEL 300

H. H. SCOTT
MODELS 300, 300A

TRADE NAME	H. H. Scott Models 300, 300A		
MANUFACTURER	H. H. Scott, Inc., 111 Powder Mill Road, Maynard, Mass.		
TYPE SET	AC Operated 9 Tube FM-AM Tuner		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	37 Watts, .30 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST 540-1610KC	FREQ. MOD.	88-108MC

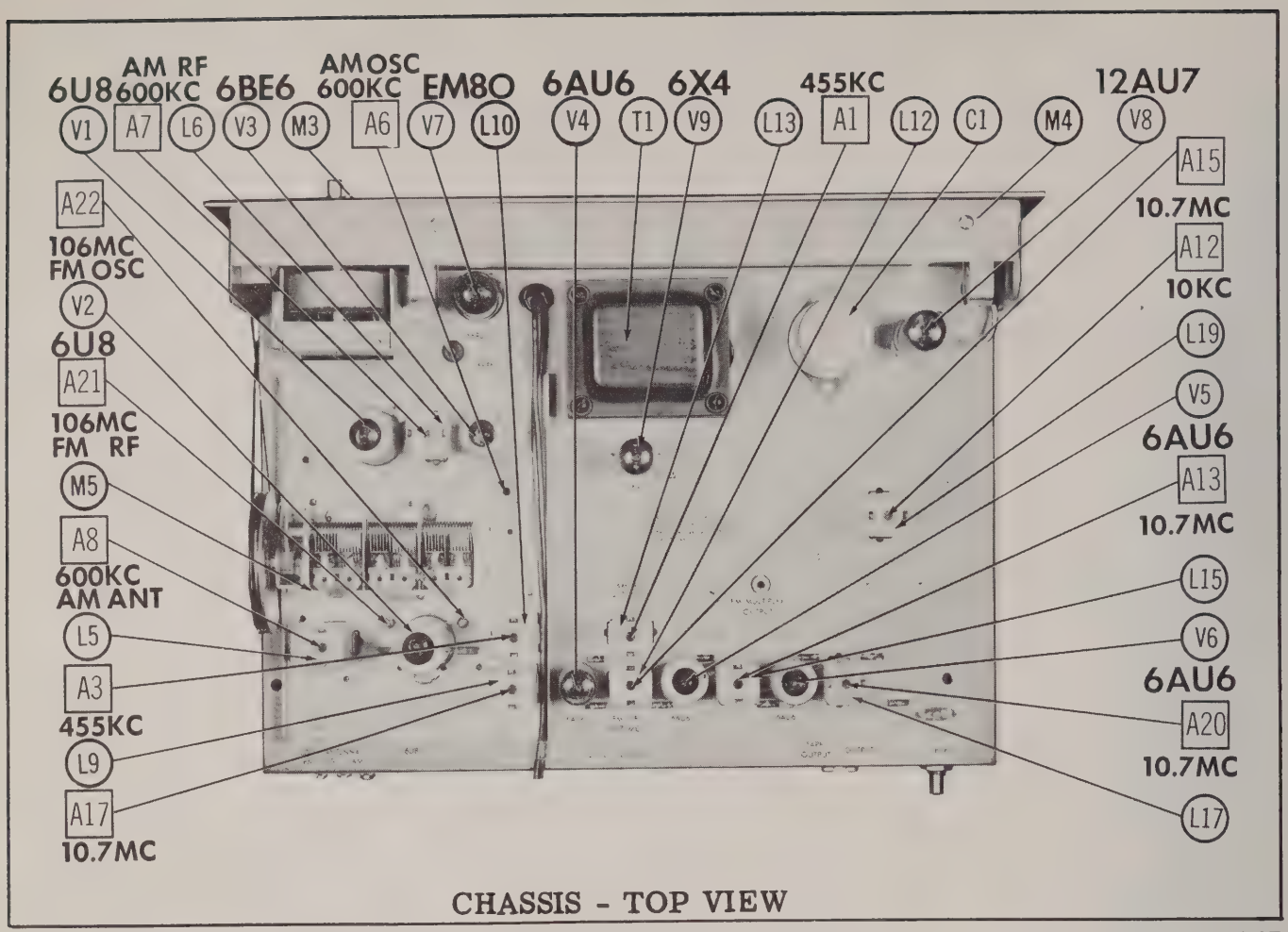
DIAL CORD STRINGING



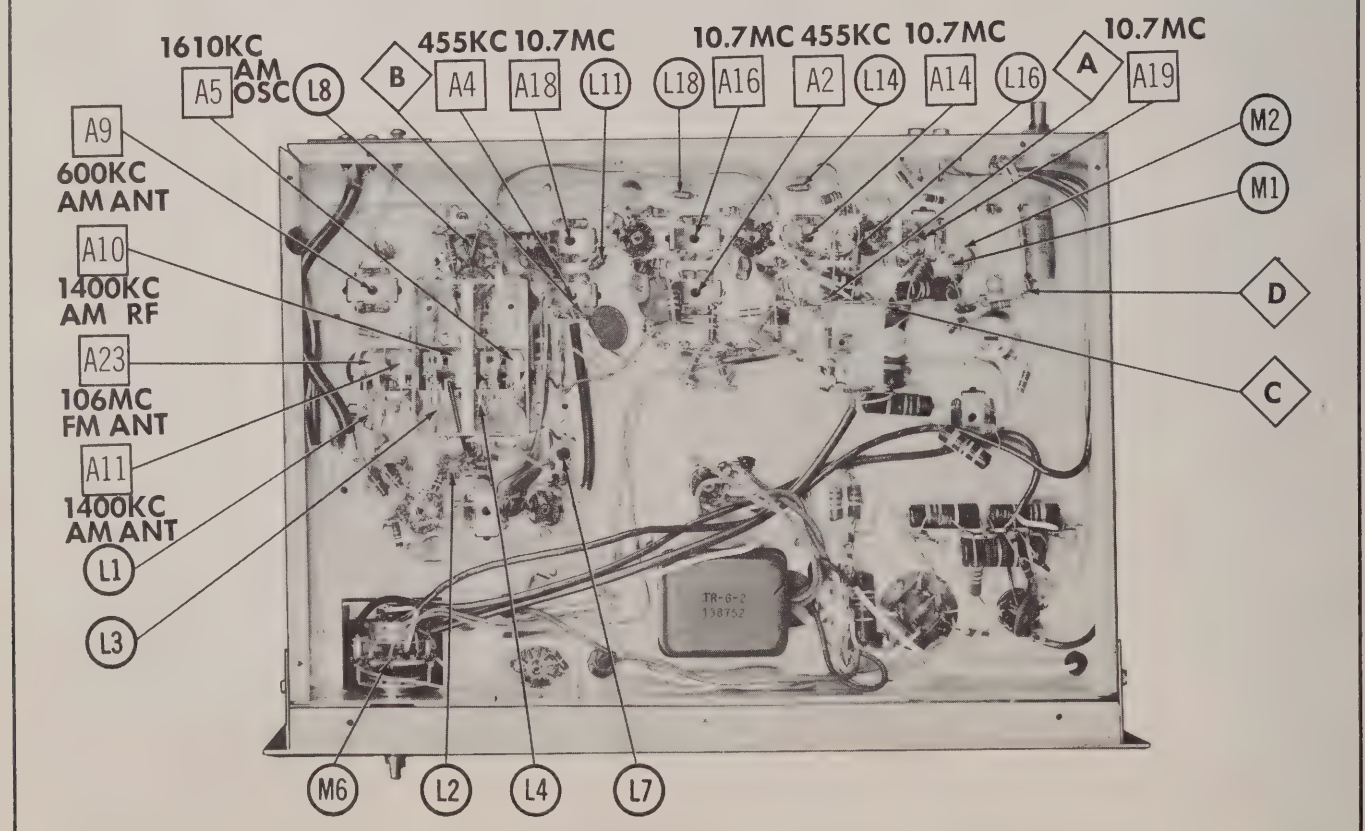
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

J13



CHASSIS - TOP VIEW



CHASSIS BOTTOM VIEW - ALIGN., INDUCTOR & MISC. IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Level control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Suggested Alignment Tools: A1 thru A4, A9 thru A18..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A7, A8, A23..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A6, A19, A20..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A21, A22..... GENERAL CEMENT #8271, 8273, 8275, 8276, 8721, 8722, 9150, 9298, 5003
WALSCO #2516, 2519

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.05mfd	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	455KC (400∿ Mod.)	AM	Point of non-interference	AC probe to output jack. Common to chassis.	A1, A2, A3, A4	Adjust for maximum output.
2.	200mmf	High side to AM antenna terminal. Low side to chassis.	1610KC	"	Tuning gang fully open	"	A5	"
3.	"	"	600KC	"	600KC	"	A6, A7 A8, A9	"
4.	"	"	1400KC	"	1400KC	"	A10, A11	"
5.	.05mfd	High side to pin 1 (grid) of 6AU6 (V4). Low side to chassis.	455KC (10KC Mod.)	"	Point of non-interference	"	A12, R2	Adjust for MINIMUM output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K (±1%) resistors in series from point Ⓓ to chassis. The junction of these two resistors is alignment point Ⓔ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.		High side to ungrounded tube shield on 6U8 (V2). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A13, A14 A15, A16 A17, A18	Adjust for maximum deflection.
7.	.01mfd	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	"	"	"	Demodulator probe couples loosely (not touching) to pin 5 (plate) of 6AV6 (V6). Common to chassis.	A19	Connect 1000Ω carbon resistor across secondary. Adjust for maximum deflection.
8.	"	"	"	"	"	DC probe to point Ⓒ. Common to point Ⓔ.	A20	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.		High side to ungrounded tube shield over 6U8 (V2). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓐ. Low side to chassis.	A13, A14 A15, A16 A17, A18	Connect 5mfd between point Ⓑ and chassis. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
7.	.01mfd	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	"	"	"	Vert. Amp. to point Ⓓ. Low side to chassis.	A19	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
8.	"	"	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A20	Reconnect stabilizing capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A19 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	270Ω Carbon Resistor	High side thru 270Ω to FM antenna terminal. Low side to chassis.	106MC (Unmod.)	FM	106MC	AC probe to output jack. Common to chassis.	A21, A22, A23	Adjust for maximum deflection.
10.	"	"	92MC	"	92MC	"	L4, L3, L1	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 9 and 10.

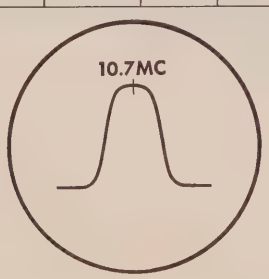


FIG. 1

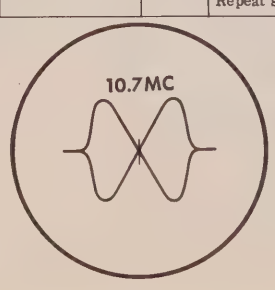
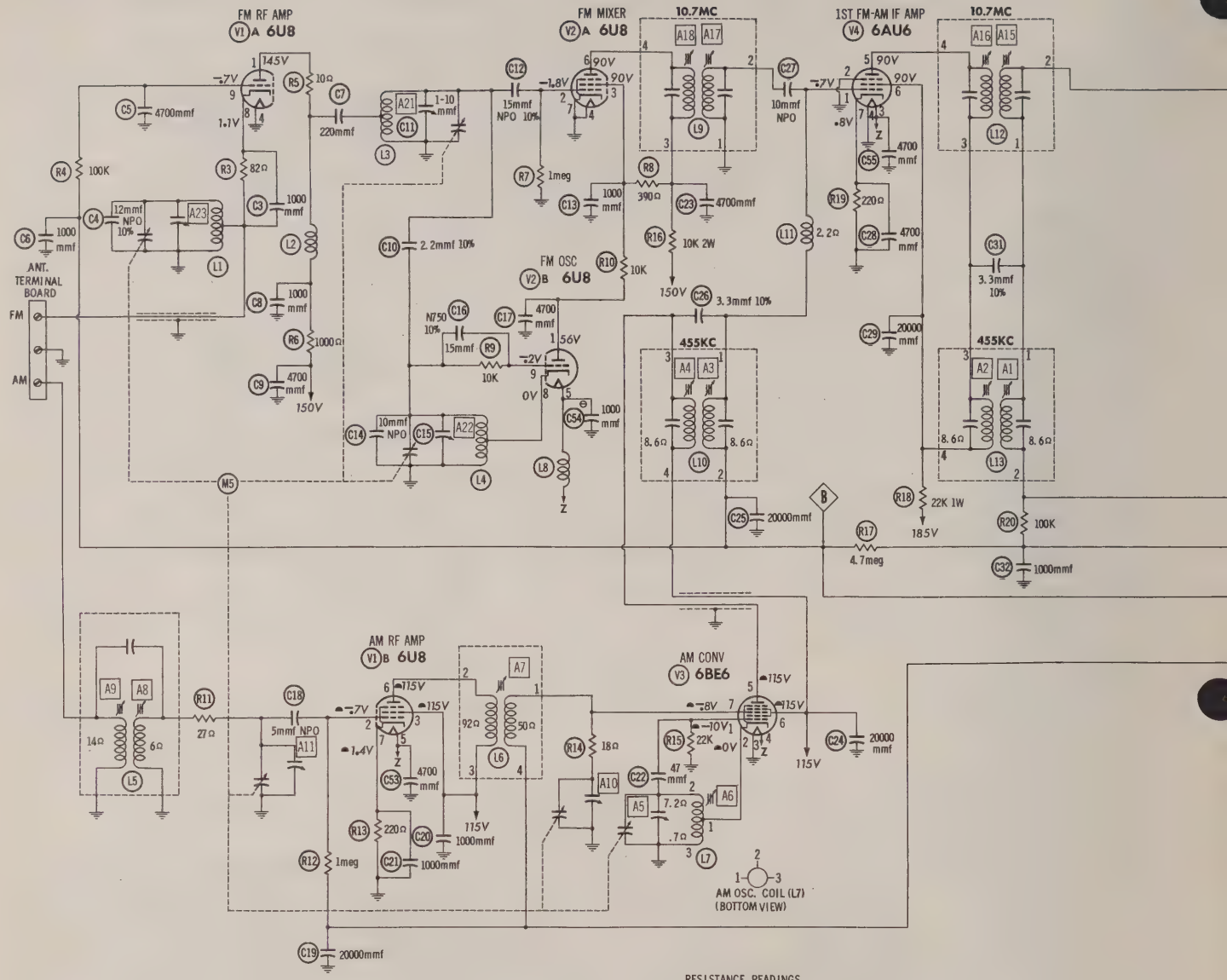


FIG. 2



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6U8A	†1700Ω	7.5meg	†▪5400Ω	0Ω	.1Ω	†▪5400Ω	220Ω	82Ω	1.2meg
V2	6U8	†20K	1meg	†10K	0Ω	.1Ω	†10K	0Ω	0Ω	10K
V3	6BE6	▪22K	▪.7Ω	0Ω	.1Ω	†▪5400Ω	†▪5400Ω	▪6meg		
V4	6AU6	1meg	0Ω	.1Ω	0Ω	†22K	†23K	220Ω		
V5	6AU6	110K	0Ω	.1Ω	0Ω	†11K	†11K	220Ω		
V6	6AU6	47K	2.3meg	.1Ω	0Ω	†28K	†28K	0Ω		
V7	EM80	1meg	0Ω	†0Ω	0Ω	.1Ω	NC	†1meg	†0Ω	†0Ω
V8	12AU7	†48K	1meg	1000Ω	.1Ω	0Ω	†270K	0Ω	2700Ω	0Ω
V9	6X4	100Ω	NC	0Ω	.1Ω	NC	110Ω	¶		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▪ MEASURED IN "AM" POSITION.
† MEASURED FROM PIN 7 OF V9.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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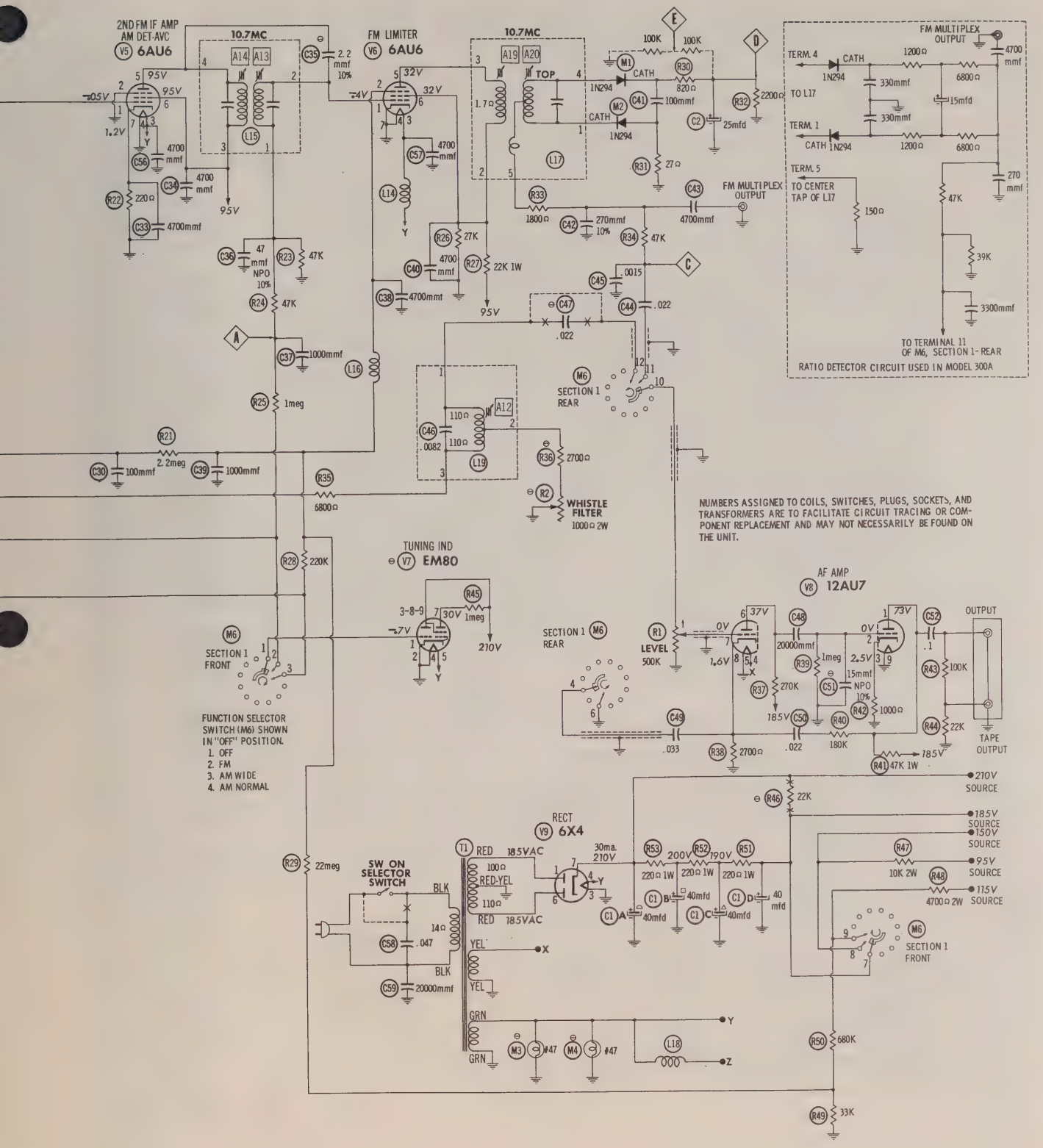
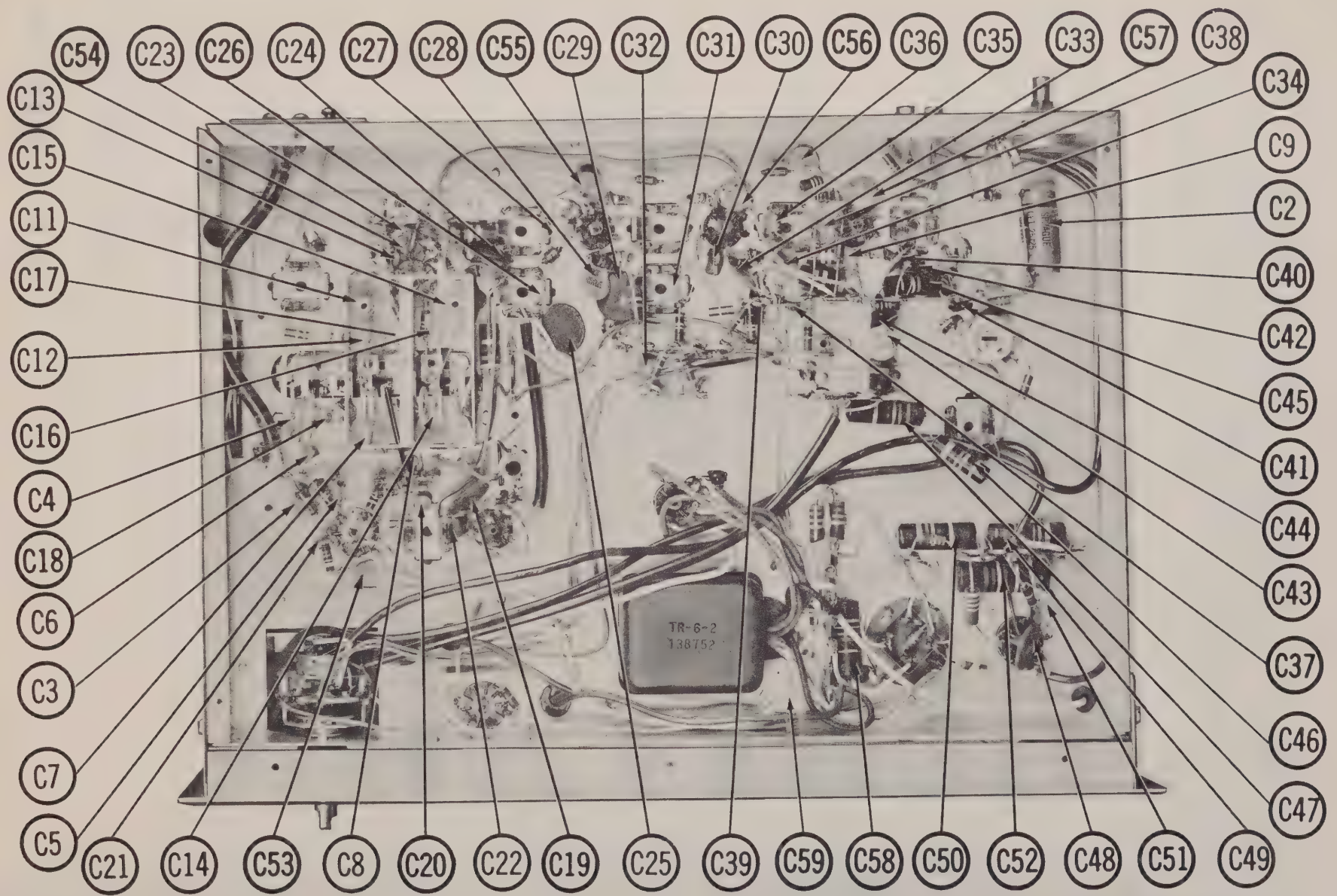


H. H. SCOTT
MODELS 300, 300A



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amplifier-AM RF Amplifier	6U8A	
V2	FM Mixer-FM Osc.	6U8	
V3	AM Converter	6BE6	
V4	1st FM-AM IF Amplifier	6AU6	
V5	2nd FM IF Amplifier-AM Det. - AVC	6AU6	
V6	FM Limiter	6AU6	
V7	Tuning Indicator	EM80/6BR5	
V8	AF Amplifier	12AU7	
V9	Rectifier	6X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA H. H. SCOTT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▬40	250			D0020	FP327. 89	TMQ-116	T-102	TVLS-4538*
B	■40	250			BR4025	TC58		MT-2540	
C	▲40	250							
D	40	250							
C2	25	25		PRS25V25	BBR25-25	TC26	TD-25-25	MT-0225	TVA-1205

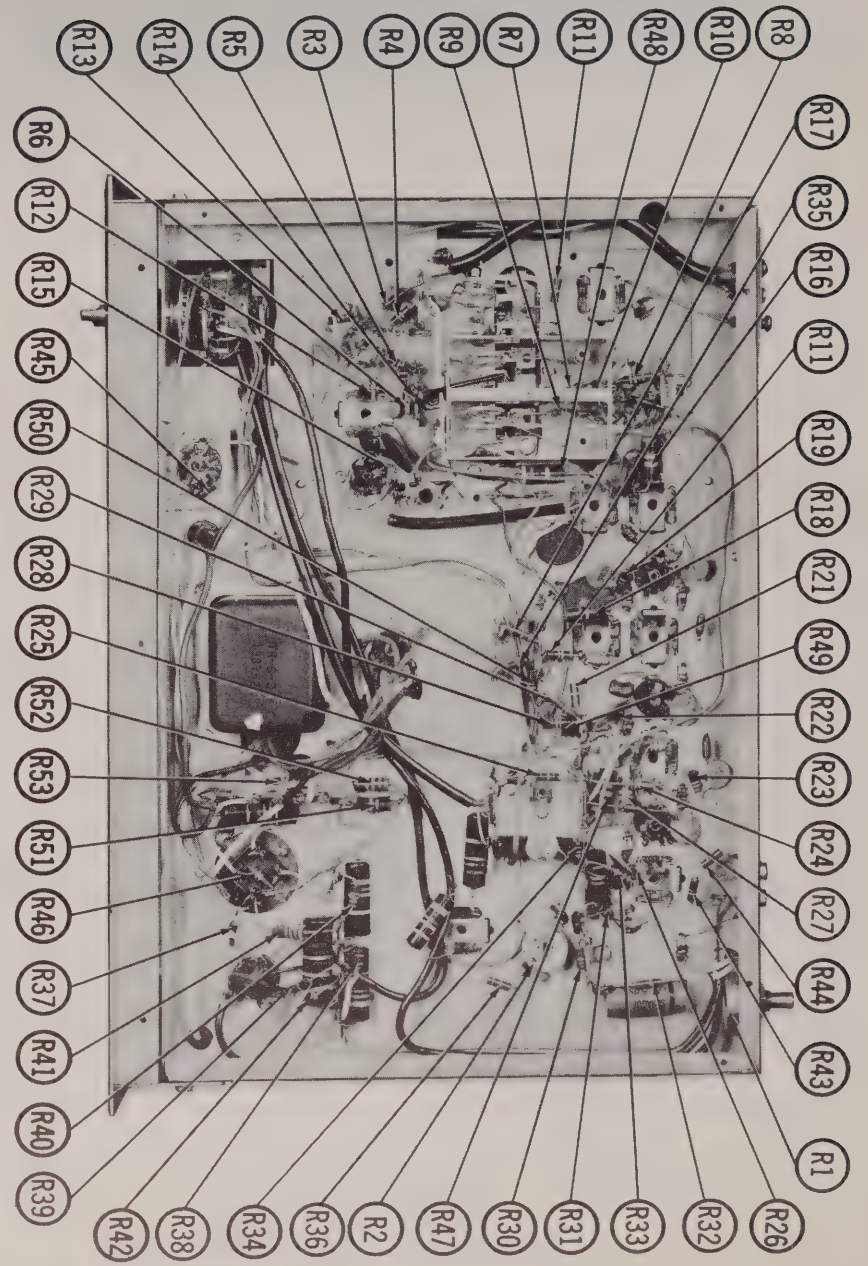
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA H. H. SCOTT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C3	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C4	12		NPO 10%			TCZ-12	C10Q12C	CNO-412	5TCC-Q12S 10%*	
C5	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C6	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C7	220				BPD-00022	DD-221	L10T22	B-322	5GA-T22	
C8	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C9	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C10	2. 2		10%		NPO-SI 2. 2	TCZ-2R2	CTA6V22C	CNO-512	5TCCB-V22S 10%*	
C11	1-10									
C12	15		NPO 10%		NPO-DI 15	DTZ-15	C10Q15C	CNO-415	5TCC-Q15S 10%*	
C13	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C14	10		NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CNO-410	5TCC-Q1S 10%*	
C15										
C16	15		N750 10%		N750-DI 15	DTN-15	C10Q15C	CN7-415	5TCC-Q15S 10%*	
C17	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C18	5		NPO		NPO-DI 5	TCZ-4R7	C10V5C		5TCCB-V5S *	
C19	20000				BPD-02	DD-203	BYB6D2	B-120	5GA-S2	
C20	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C21	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C22	47				1469-000047		22R5Q47		MS-447	
C23	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C24	20000				BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C25	20000				BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C26	3. 3		10%		NPO-SI 3. 3	TCZ-3R3	CTA6V33C	CNO-533	5TCCB-V33S 10%*	
C27	10		NPO		NPO-DI 10	DTZ-10	C10QC1	CNO-410	5TCC-Q1	
C28	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D1	
C29	20000				BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C30	100				1468-0001	D6-101	5W5T1	MC235	1FM-31	
C31	3. 3		10%		NPO-SI 3. 3	TCZ-3R3	CTA6V33C	CNO-533	5TCCB-V33S 10%*	
C32	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C33	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C34	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C35	2. 2		10%		NPO-SI 2. 2	TCZ-2R2	CTA6V22C	CNO-522	5TCCB-V22S 10%*	②
C36	47		NPO 10%		NPO-DI 47	DTZ-47	C10Q47C	CNO-447	5TCC-Q47S 10%*	
C37	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C38	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C39	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C40	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C41	100				1468-0001	D6-101	5W5T1	MC235	1FM-31	
C42	270		10%		1469-00027		5R5T27		MS-327	

CHASSIS-BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA H. H. SCOTT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C43	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C44	.022	400			P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	
C45	.0015	400			P488N-0015	D6-152	CUB6D15	GEM-6215	6TM-D15	
C46	.0082	400			P488N-0082			GEM-6282	6TM-D82S *	
C47	.022	400			P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	③
C48	20000				BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C49	.033	400			P488N-033	DF-303	CUB4S33	GEM-4133	4TM-S33	
C50	.022	400			P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	
C51	15		NPO 10%		NPO-D1 15	DTZ-15	C10Q15C	CNO-415	5TCC-Q15S 10%*	
C52	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C53	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C54	1000				BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	①
C55	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C56	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C57	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C58	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C59	20000				BPD-02	DD-203	BYB6S2	B-120	5GA-S2	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Some versions may use 4700mmf in this application.
② Some versions may use .22mmf in this application.
③ Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA H. H. SCOTT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	RCV-500K-3	B-59	A47-500K-S	Q11-133	U50	Level Control
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R2	1000Ω	2(WW)	RWV-1K	WN-102 ■	39-1000	WPS1000 ■	FL-1K	Whistle Filter ①

■ Drill 3/8" mounting hole.

① Model 300A uses 1500Ω in this application.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	H. H. SCOTT PART No.	NOTES
R3	82Ω			
R4	100K			
R5	10Ω			
R6	1000Ω			
R7	1meg			
R8	390Ω			
R9	10K			
R10	10K			
R11	27Ω			
R12	1meg			
R13	220Ω			
R14	18Ω			
R15	22K			
R16	10K	2		
R17	4.7meg			
R18	22K	1		
R19	220Ω			
R20	100K			
R21	2.2meg			
R22	220Ω			
R23	47K			
R24	47K			
R25	1meg			
R26	27K			
R27	22K	1		
R28	220K			

① Some versions may use 2200Ω in this application.

ITEM No.	RATING OHMS	RATING WATT	H. H. SCOTT PART No.	NOTES
R29	22meg			
R30	820Ω			
R31	27Ω			
R32	2200Ω			
R33	1800Ω			
R34	47K			
R35	6800Ω			
R36	2700Ω			①
R37	270K			
R38	2700Ω			
R39	1meg			
R40	180K			
R41	47K	1		
R42	1000Ω			
R43	100K			
R44	22K			
R45	1meg			
R46	22K			②
R47	10K	2		
R48	4700Ω	2		
R49	33K			
R50	680K			
R51	220Ω	1		
R52	220Ω	1		
R53	220Ω	1		

② Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA H. H. SCOTT PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Ant. Coil						.33 Microhenry
L2	RF Choke						
L3	FM RF Coil						
L4	FM Osc. Coil						
L5	AM Ant. Trans.	TRV-AM-A1					
L6	AM RF Trans.	TRV-AM-M1					
L7	AM Osc. Coil		14-1055				
L8	Fil. Choke		19-1000	BC-561	4602		1 Microhenry
L9	1st FM IF	TRV-10-71	16-3487	FM-254	1463		
L10	1st AM IF	TRV-455D	16-6758	BC-352	12-C1	RF-1	
L11	RF Choke		19-1015	TV-186		VP-2	80 Microhenries
L12	2nd FM IF	TRV-10-71	16-3487	FM-254	1463		
L13	2nd AM IF	TRV-455D	16-6758	BC-353	12-C2	RF-2	
L14	Fil. Choke		19-1000	BC-561	4602		1 Microhenry
L15	3rd FM IF	TRV-10-71	16-3487	FM-254	1463		
L16	RF Choke		19-1000	BC-561	4602		1 Microhenry
L17	Ratio Detector	TRV-10.7D	17-3498	FM-255	1465		
L18	Fil. Choke		19-1000	BC-561	4602		1 Microhenry
L19	10KC Filter	TRV-01-T					

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA H. H. SCOTT PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .3A	370VCT @ .030A	5V @ .25A	TR-6-2						
	SEC. 3	SEC. 4	SEC. 5							
	6.3V @ 3.2A									

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA H. H. SCOTT PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M1	1N294		1N636	1N295	Ratio Detector (Pigtail)
M2	1N294		1N636	1N295	Ratio Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	H. H. SCOTT PART No.	NOTES
M3	Lamp		#47 (Alternate Type #44)
M4	Lamp		#47 (Alternate Type #44)
M5	Tuning Cap.		6 Gang (AM Sections: Ant. 6-262mmf, RF 5-258mmf, Osc. 11-109mmf)
M6	Switch		Function Selector (Rotary Wafer Type) includes Power-On-Off, SPST (Snap Type)

WIRING DATA

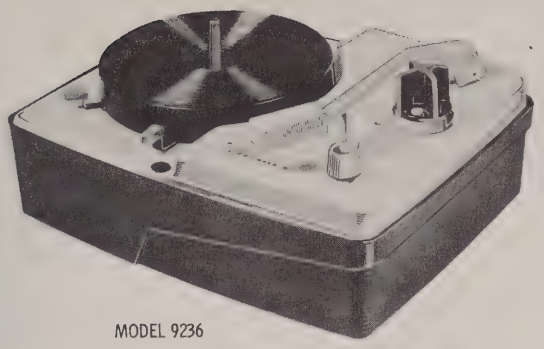
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

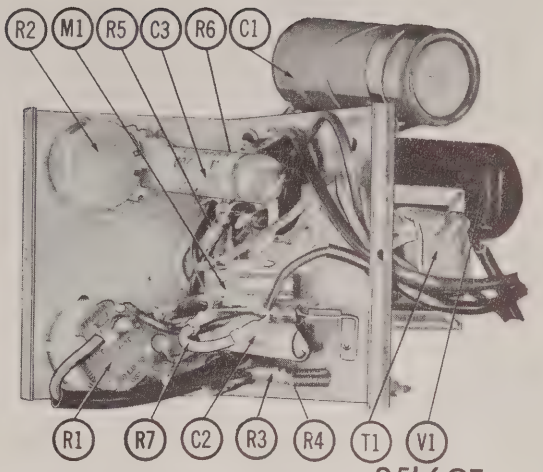
PHOTOFACT* Folder

SILVERTONE MODELS 9231, 9232, 9233, 9234, 9236, 9238 (Ch. 528.56003, 004, 005, 280, 350, 528.59170)

SILVERTONE MODELS 9231, 9232, 9233, 9234, 9236, 9238 (Ch. 528.56003, 004, 005, 280, 350, 528.59170)

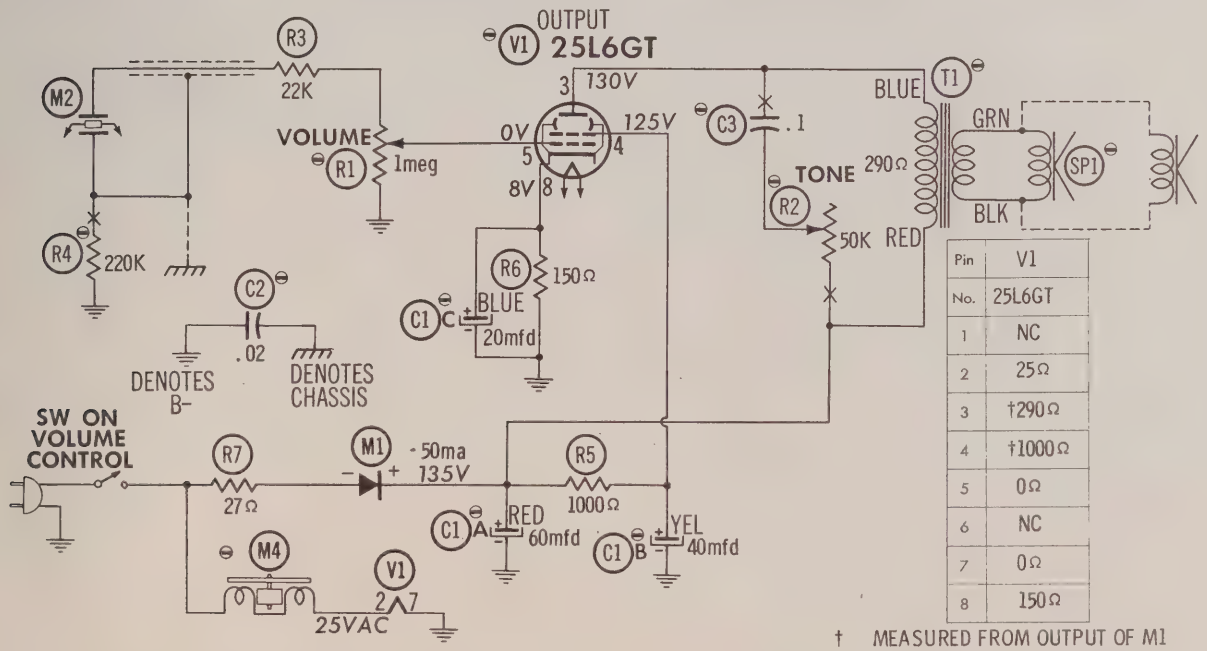


MODEL 9236



SILVERTONE MODELS 9231, 9232, 9233, 9234, 9236, 9238 (Ch. 528.56003, 004, 005, 280, 350, 528.59170)

TRADE NAME	Silvertone Models 9231, 9232 (Ch. 528.56003, 528.56004, 528.56005); 9233 (Ch. 528.56280); 9234 (Ch. 528.56350); 9236, 9238 (Ch. 528.59170)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	AC Operated One Tube Phono Amplifier With Manual Record Player
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 54 Watts, .49 Amp. @ 117 Volts AC (With Motor)



Pin No.	V1 25L6GT
1	NC
2	25Ω
3	†290Ω
4	†1000Ω
5	0Ω
6	NC
7	0Ω
8	150Ω

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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† MEASURED FROM OUTPUT OF M1
NC NO CONNECTION
⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 442 FOLDER 12

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Output	25L6GT	Note 1

ITEM No.	USE	TYPE	NOTES

Note 1. Some versions may use 25CA5.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	Silvertone PART No.	REPLACEMENT DATA AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	18-51-5 ①	PRS150/25V8040/20	BBRT8415C		CDB-T-1002	TVAS-3436, 3*	
B	40	150							
C	20	20							

① Part #18-56-5 Models 9231, 9232, 9233, & 9234
* Not normally in distributors stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.02	400		16-20343	P488N-02	DD-203	CUB4S2	GEM-412	4TM-S2	①
C3	.1	200		16-10423	P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	① ②

① Chassis 528.56280, 528.56350 use .047mfd in this application (Part #16-47343).
② Not used in Ch. 528.56003 & 528.56004.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Silvertone PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	24-312-0	B-70				Volume Note 1
B	Switch			KR-1				
R2	50K	½	24-141-0	B-31				Tone Note 2

Note 1. Chassis 528.56003, 004, 005, 280, 350 use Part #24-311-0.
Note 2. Chassis 528.56280, 350 use Part #24-146-2. Not used in chassis #528.56003, 004, 005.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Silvertone PART No.	NOTES
R3	22K		60-22301	
R4	220K		60-22401	Note 1
R5	1000Ω		60-10201	

ITEM No.	RATING OHMS	RATING WATT	Silvertone PART No.	NOTES
R6	150Ω		60-15101	
R7	27			

Note 1. Not used in some versions.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA Silvertone PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	3800Ω	1-2Ω	80-52-1 ①							① Used in Models 9234, 9233, 9236 9238
	1600Ω	3-4Ω	80-430-1 ②	Z1100 ③			A-3865 ③	22S53		② Used in Models 9231, 9232
										③ Drill new mounting hole

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA Silvertone PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	33-359-4 ①	4A07	① Model 9236
	4"	PM	3-4Ω	33-348-4 ②		② One used in Models 9231, 9232, 9233. Two used in Models 9234, 9238.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Silvertone PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	NOTES
M1	.050A	83-1112	1234AH HA154 ①	T065 SD-94 ①	65 K200 ①	① Silicon Type

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA Silvertone PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	REMARKS
M2	33-308-0	414-2	N8-2	31	CRA-552 or CRA-552D	Models 9231, 9232
	33-294-0					Models 9233, 9236, 9238
	33-303-0					Model 9234

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA Silvertone PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M3	83-1258	† CRA-552 or ♦ CRA-552D	† W-64AGS or ♦ W-64AGD	Models 9231, 9232
	33-1145	† CRA-552 or ♦ CRA-552D	† W-64AGS or ♦ W-64AGD	Models 9233
	83-1255 (78 RPM)			Model 9234
	83-1254 (LP)			
	83-1145			Models 9236, 9238

† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M4	Motor	59-67	Complete, Record Player 528.57080
	Motor	59-66	Complete, Record Player 528.57090
	Motor	59-90	Includes Drive Wheel Record Player 528.56003, 56350, 56280
	Motor	59-107	Includes Drive Wheel Record Player 528.56004
	Motor	57-137	Complete, Record Player 528.56005

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	52-764-0	Volume-On-Off, Tone, Models 9236, 9238
Knob	52-830-0	Volume-On-Off, Tone, Models 9231, 9232
Knob	52-1051-0	Volume-On-Off, Tone, Model 9233
Knob	52-1052-0	Volume-On-Off, Tone, Model 9234
Knob	52-771-0	2 Used, Record Player Ch. 528.57080, .57090

WIRING DATA

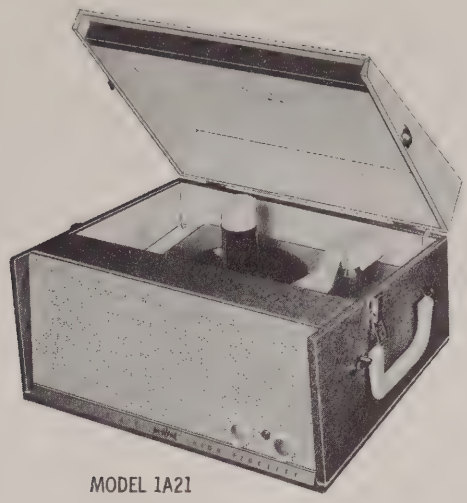
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

STEELMAN MODELS 1A20, 1A21

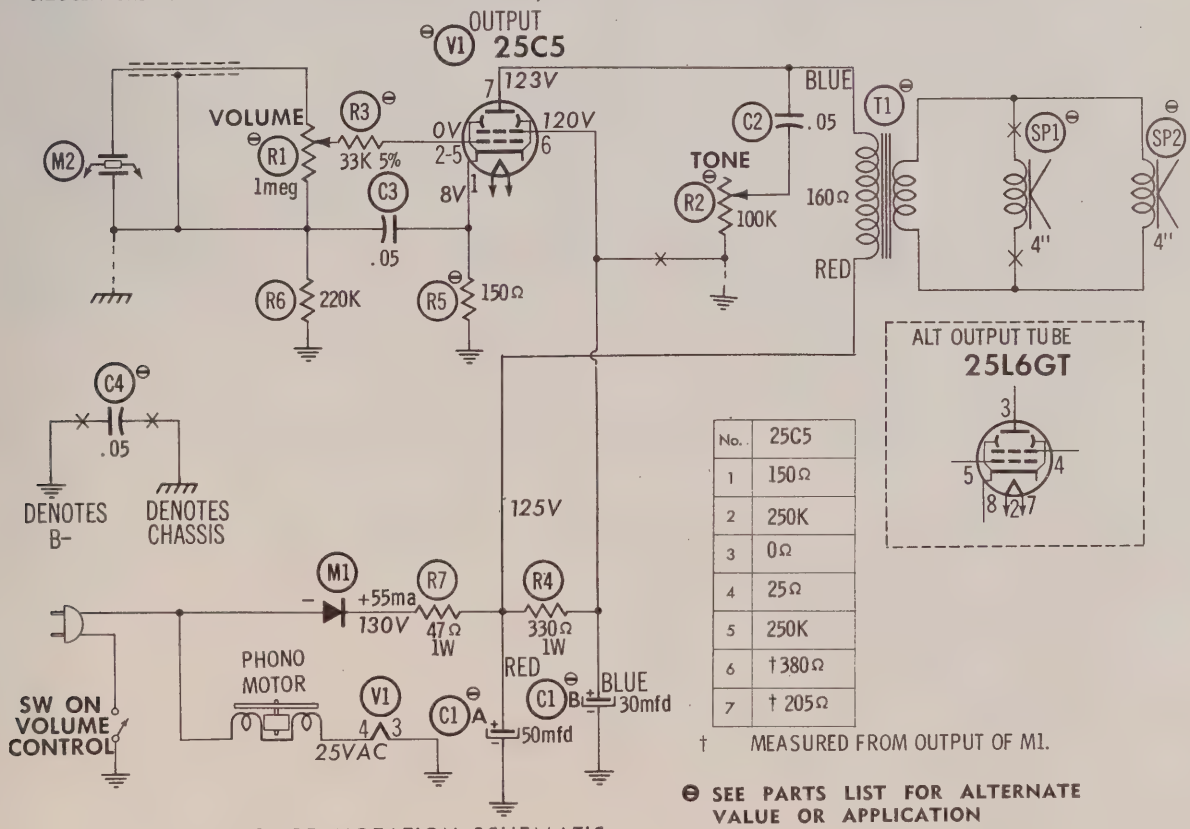
STEELMAN MODELS
1A20, 1A21



MODEL 1A21

TRADE NAME	Steelman Models 1A20, 1A21
MANUFACTURER	Steelman Phono & Radio Co., Inc., 2-30 Anderson Ave., Mount Vernon, N. Y.
TYPE SET	AC Operated Phono Amplifier With 45 RPM Automatic Record Changer
TUBES	One
POWER SUPPLY	110 - 120 Volts AC-60 Cycles RATING 34 Watts, .36 Amp@117 Volts AC (Less Motor)

RECORD CHANGER PART #300408 USED IN MODEL 1A20, PART #300404 USED IN MODEL 1A21.



No.	25C5
1	150Ω
2	250K
3	0Ω
4	25Ω
5	250K
6	†380Ω
7	† 205Ω

† MEASURED FROM OUTPUT OF M1.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

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H812

DATE 5-59

SET 442 FOLDER 13

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Output	25C5	Note 1

Note 1. Alternate Type 25L6GT

ITEM No.	USE	TYPE	NOTES

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	STEELMAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	582007 ①	PRS150V5030	BBRD5315	WD210	TMD-12	MTD-301	TVA-2450
B	30	150							

① Part #582005 used in Model 1A20.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	STEELMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.05	200		P288N-05	DF-503	CUB2S5	GEM-415	2TM-S5	
C3	.05	400		P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5	
C4	.05	400		P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5	①

① Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	STEELMAN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1meg	½	360081	B-70	A47-1meg-Z	Q13-137	U53	Volume Note 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1 or KR-1*	SWE-12	76-1	US-26	
R2A	100K	½	360050	B-41	A47-100K-Z	Q13-128	U39	Tone, Model 1A21
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	100K	½	360250	B-41	A47-100K-Z	Q13-128	U39	Tone, Model 1A20
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

* Use KR with CRL "Red Label" controls and KB with "Blue Label" controls.

Note 1. Part #360281 used in Model 1A20.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		STEELMAN PART No.	NOTES
	OHMS	WATT		
R3	33K 5%			Note 1
R4	330Ω	1		Note 2
R5	150Ω			Note 3

Note 1. Some versions may use 27K in this application.
Note 2. Some versions may use 4700Ω in this application.

ITEM No.	RATING		STEELMAN PART No.	NOTES
	OHMS	WATT		
R6	220K			
R7	47Ω	1		

Note 3. Some versions may use 100Ω in this application.

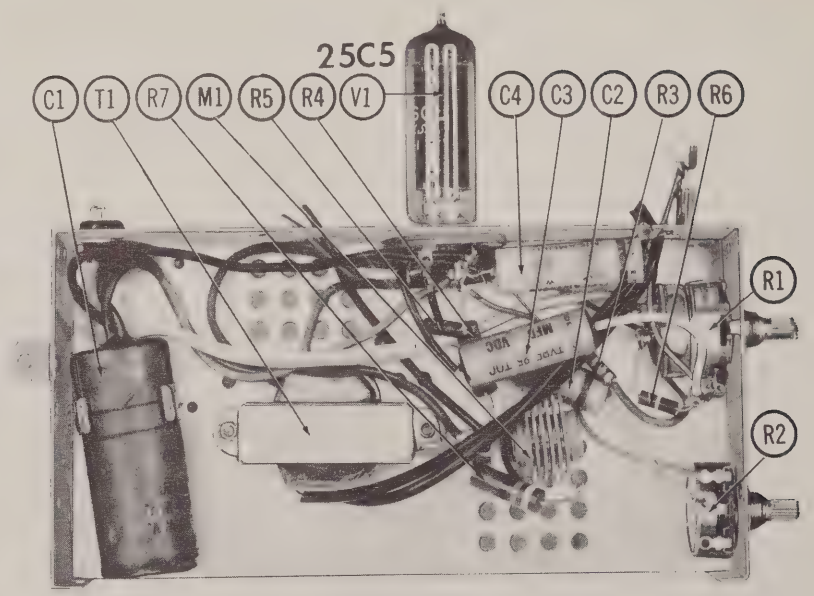
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	STEELMAN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2300Ω	1-2Ω	430260 ①	Z1001	A-2902 ③	AU-604 ③	A-3849 ③	24S64 ③	S-12X	① Model 1A21
	2200Ω	3-4Ω	430330 ②	Z1101	A-3025	AU-605	A-3332	24S53		② Used in Model 1A20
										③ Drill new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	STEELMAN PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	404003 ①	4A07 ①	① Parallel And Phase
SP2	4"	PM	3-4Ω	404003 ①②	4A07 ①	② Not used in Model 1A20

CHASSIS—BOTTOM VIEW



SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	STEELMAN PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.057A	380001	1234AH	T065 SD-94 ①	65A K200 ①	① Silicon Type

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	STEELMAN PART No.	ASTATIC PART No.		JENSEN PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2		414-2	N8-2			

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	STEELMAN PART No.	JENSEN PART No.	WALCO PART No.	
M3		† CRA-552 or ♦ CRA-552D	† W-64AGS or ♦ W-64AGD	† Jewel ♦ Diamond

WIRING DATA

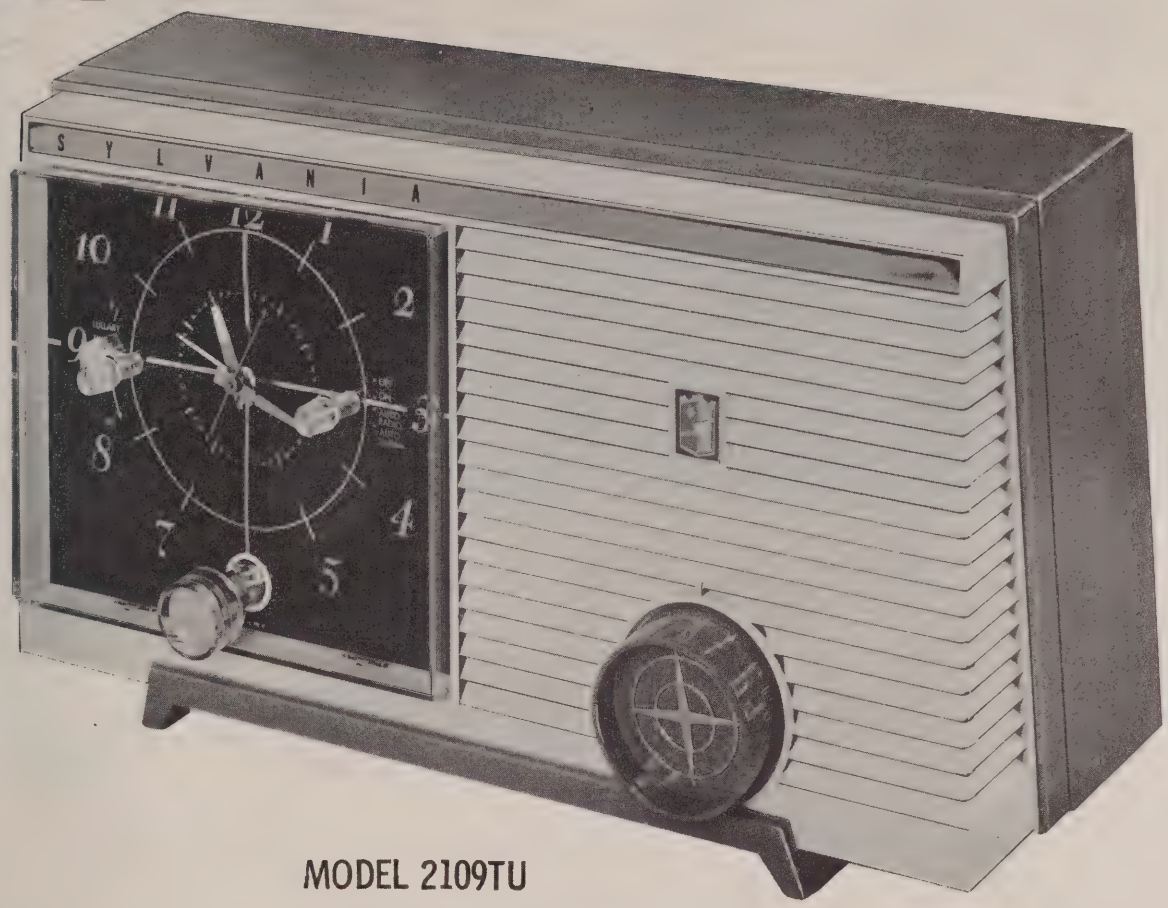
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

SYLVANIA MODELS 1108RE, TU, WH, 1206BL, BR, 2109RE, TU, WH, 2207BL, BR (Ch. 1-630-1, -2, -3, -4)

SYLVANIA MODELS 1108RE, TU, WH, 1206BL, BR, 2109RE, TU, WH, 2207BL, BR (Ch. 1-630-1, -2, -3, -4)



MODEL 2109TU

SYLVANIA MODELS 1108RE, TU, WH, 1206BL, BR, 2109RE, TU, WH, 2207BL, BR (Ch. 1-630-1, -2, -3, -4)

TRADE NAME	Sylvania Models 1108RE, 1108TU, 1108WH(Ch. 1-630-1); 1206BL, 1206BR(Ch. 1-630-3); 2109RE, 2109TU, 2109WH (Ch. 1-630-2); 2207BL, 2207BR (Ch. 1-630-4)
MANUFACTURER	Sylvania Home Electronics, Div. Of Sylvania Electric Products Inc., 700 Ellicott St., Batavia N. Y.
TYPE SET	AC Operated 5 Tube AM Receiver (Models 1108 Series & 1206 Series Are Not Clock Versions)
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 28 Watts, .28 Amp. @117 Volts AC (Less Clock)
TUNING RANGE - BROADCAST	540 - 1650KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1 thru A4..... GENERAL CEMENT #5097, 8727
WALSCO # 2515
A5, A6..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd.	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001mfd to reduce hum modulation.
2.		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	600KC	Tune to 600KC signal	"	A6	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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H972

SET 442 FOLDER 14

PARTS LIST & DESCRIPTION (continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Sylvania PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	539-0429 ①	4A1	①Includes T1. All Models except 2109RE.
	4"	PM		439-0429 ②		② Used in Model 2109RE.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Sylvania PART No.	REPLACEMENT DATA
K1	Audio Coup. Net	100mmf, 100mmf, 100mmf, 125mmf, 5000mmf, 5000mmf, 470K, 470K, 10meg	190-0028	

MISCELLANEOUS

ITEM No.	PART NAME	Sylvania PART No.	NOTES
M1	Tuning Cap.	170-0029	2 Gang, Model 2109 Series
	Tuning Cap.	170-0019	2 Gang, Models 1108 Series, 1206 Series, 2207 Series

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

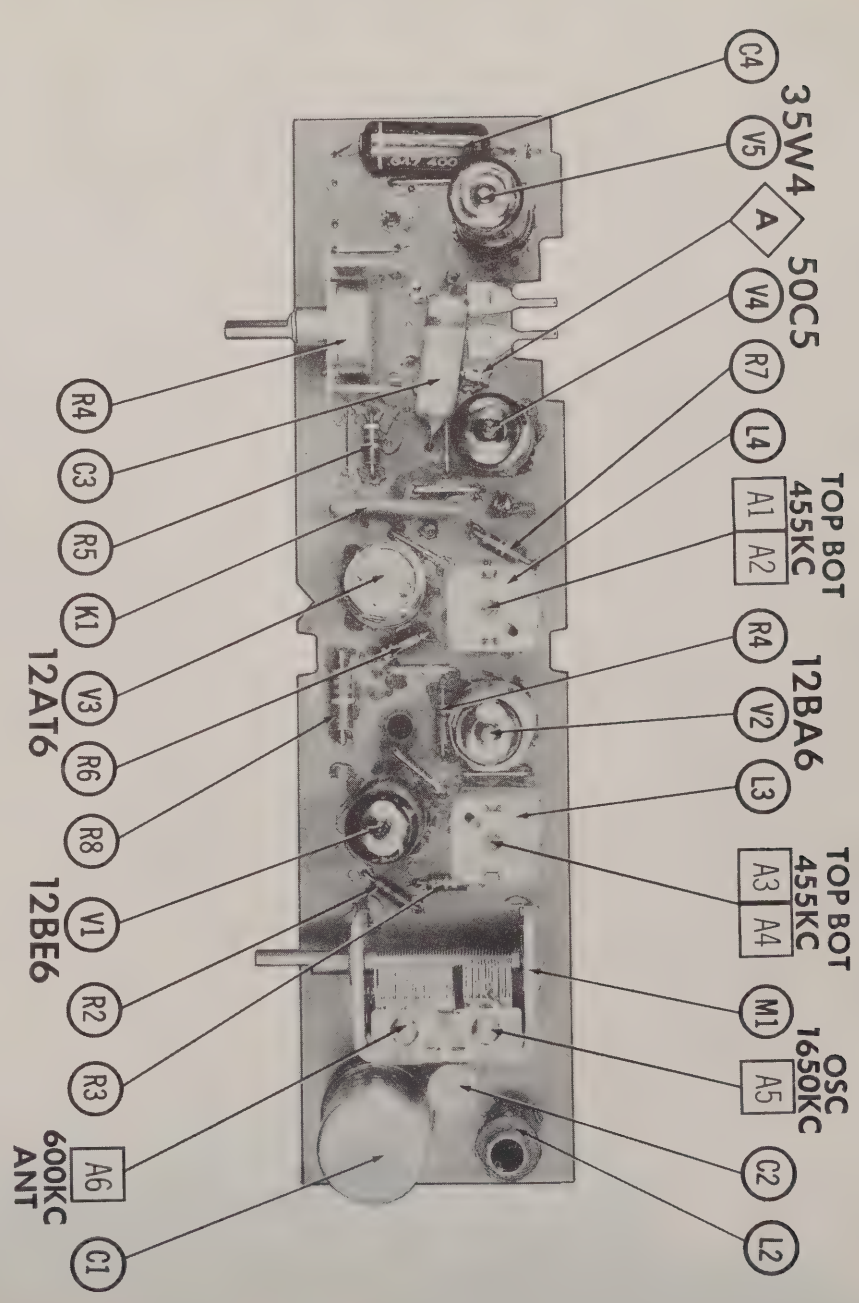
NAME	PART NO.	DESCRIPTION
Knob	741-0044	Tuning, Models 1108TU, 2109TU
Knob	741-0043	Tuning, Model 1108WH
Knob	741-0045	Tuning, Models 1108RE, 2109RE
Knob	741-0068	Tuning, Model 2109WH
Knob	741-0047	Tuning, Includes Retainer, Models 1206BL, 2207BL
Knob	741-0046	Tuning, Includes Retainer, Models 1206BR, 2207BR
Knob	742-0023	Volume, On-Off, Model 1108WH
Knob	742-0025	Volume, On-Off, Model 1108TU
Knob	742-0026	Volume, On-Off, Model 1108RE
Knob	742-0024	Volume, Models 2109TU, 2109RE, 2109WH
Knob	742-0028	Volume, Includes Retainer, Models 1206BL, 2207BL
Knob	742-0027	Volume, Includes Retainer, Models 1206BR, 2207BR
Knob	740-0170	Clock, On-Off, Models 2109TU, 2109RE, 2109WH, 2207BL, 2207BR
Knob	740-0205	Clock, Sleep, Models 2109TU, 2109RE, 2109WH, 2207BL, 2207BR
Knob	740-0226	Dimmer, Models 2207BL, 2207BR
Cabinet	813-0120	Includes Clockface, Models 2109TU, 2109RE
Cabinet	813-0121	Model 1108TU
Cabinet	813-0122	Model 1108RE
Cabinet	813-0119	Model 1108WH
Cabinet	813-0128	Model 2109WH
Cabinet	813-0125	Includes Overlay And Dial Station, Model 1206BL
Cabinet	813-0124	Includes Overlay And Dial Station, Model 1206BR
Cabinet	813-0127	Includes Overlay And Dial Station, Model 2207BL
Cabinet	813-0126	Includes Overlay And Dial Station, Model 2207BR
Crystal	717-0005	Clock, Models 2109TU, 2109RE, 2109WH
Crystal	717-0006	Clock, Models 2207BL, 2207BR
Hour Hand	206-0006	Models 2109TU, 2109RE
Hour Hand	206-0010	Model 2109WH
Minute Hand	206-0007	Models 2109TU, 2109RE
Minute Hand	206-0011	Model 2109WH
Alarm Hand	206-0008	Models 2109TU, 2109RE, 2109WH
Sweep Hand	206-0009	Models 2109TU, 2109RE, 2109WH

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AT6	

ITEM No.	USE	TYPE	NOTES
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Sylvania PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	■70	150	161-2016	AFH2-17-50	BBRD8415	PFP214.3		PCL-2441	
B	▲30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	Sylvania PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C3	.022	400			P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	
C4	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Sylvania PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A B	500K Shaft	½	157-0052 ①					Volume

① Part #157-0041 (with switch) used in Model 1108Series; Part #157-3003 (with switch) used in Model 1206 Series; Part #157-0053 used in Model 2207 Series.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Sylvania PART No.	NOTES
	OHMS	WATT		
R2	22Ω			
R3	22K			
R4	150Ω			
R5	47K			

ITEM No.	RATING		Sylvania PART No.	NOTES
	OHMS	WATT		
R6	3.3meg			
R7	150Ω			
R8	1200Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Sylvania PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loop Ant.	582-0035 ①					
L2	Osc. Coil	113-0045					
L3	Input IF	121-0108	16-6780	BC-356	13-PC1	RF-4	
L4	Output IF	121-0108	16-6780	BC-357	13-PC2	RF-4	

① Includes Back Cover & AC Cable. Models 1108 Series use Part #582-0034.
Models 1206BL, BR use Part #582-0036.
Models 2207BL, BR use Part #582-0037.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Sylvania PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2600Ω	3-4Ω	143-0045 ①	Z1101	A-3025	AU-605	A-3332	24S53	S-12X	①Speaker mounted

PRINTED BOARD

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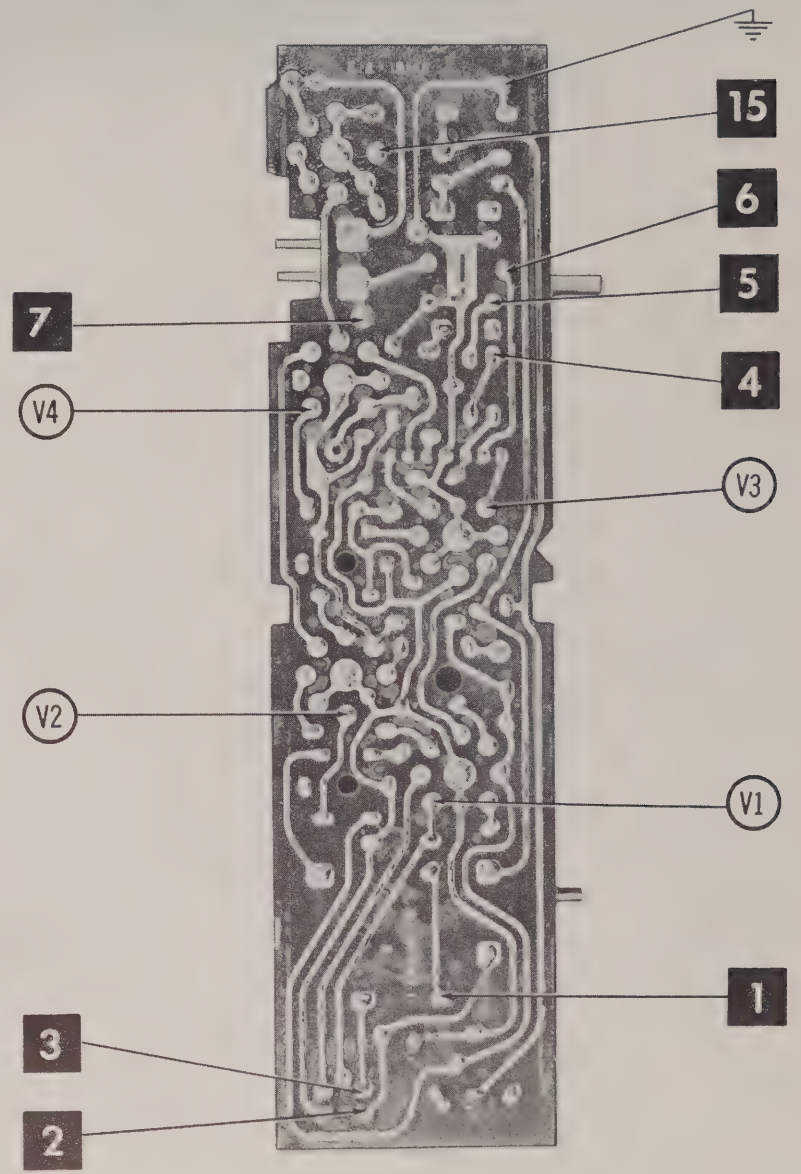
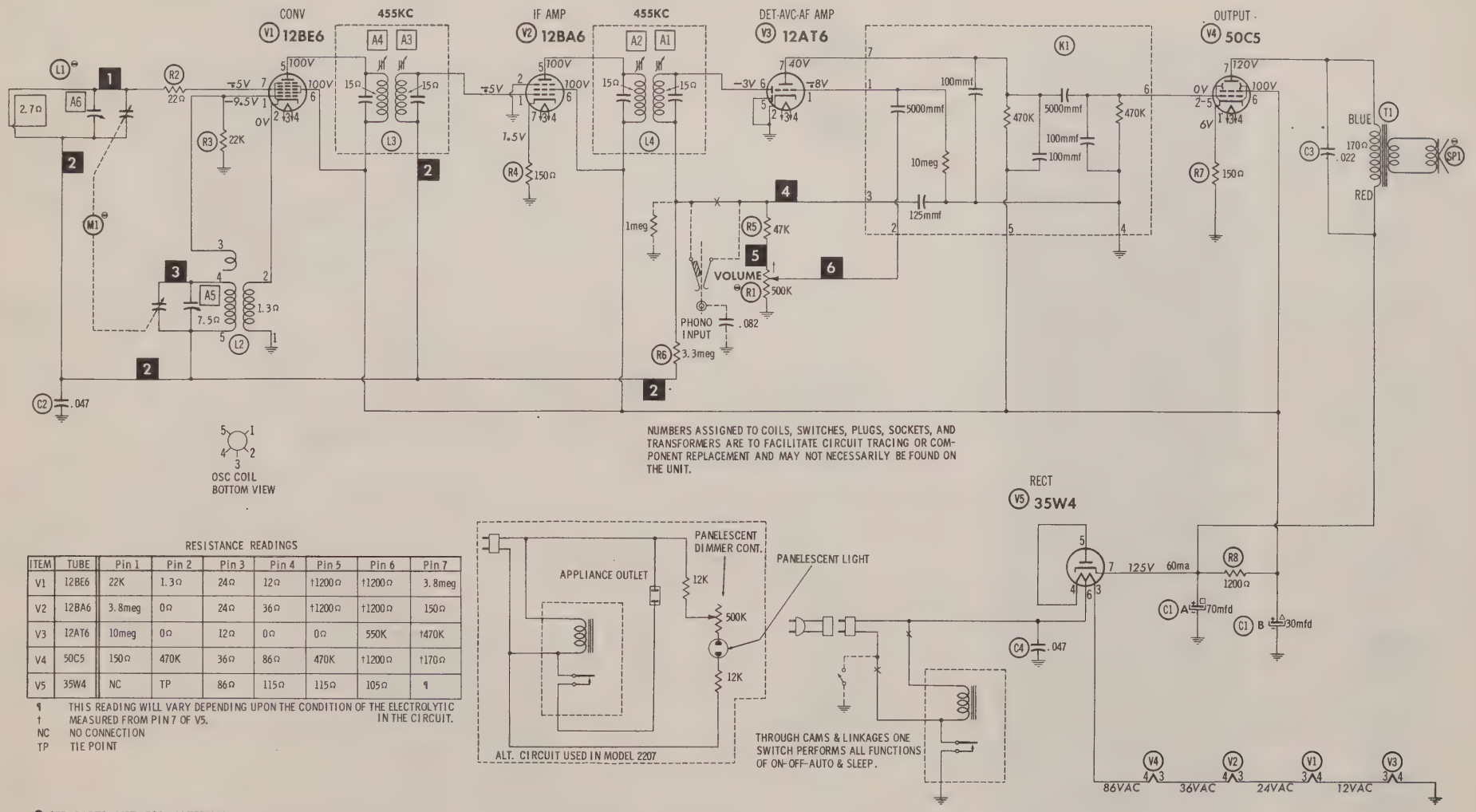
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



SYLVANIA MODELS 1108RE, TU, WH, 1206BL, BR, 2109RE, TU, WH, 2207BL, BR (Ch. 1-630-1, -2, -3, -4)

FOLDER 14



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1.3Ω	24Ω	12Ω	†1200Ω	†1200Ω	3.8meg
V2	12BA6	3.8meg	0Ω	24Ω	36Ω	†1200Ω	†1200Ω	150Ω
V3	12AT6	10meg	0Ω	12Ω	0Ω	0Ω	550K	†470K
V4	50C5	150Ω	470K	36Ω	86Ω	470K	†1200Ω	†170Ω
V5	35W4	NC	TP	86Ω	115Ω	115Ω	105Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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SYLVANIA MODELS 1108RE, TU, WH, 1206BL, BR, 2109RE, TU, WH, 2207BL, BR (Ch. 1-630-1, -2, -3, -4)

PHOTOFACT* Folder with CIRCUITRACE*
EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

V-M MODELS 570, 571

V-M MODELS 570, 571

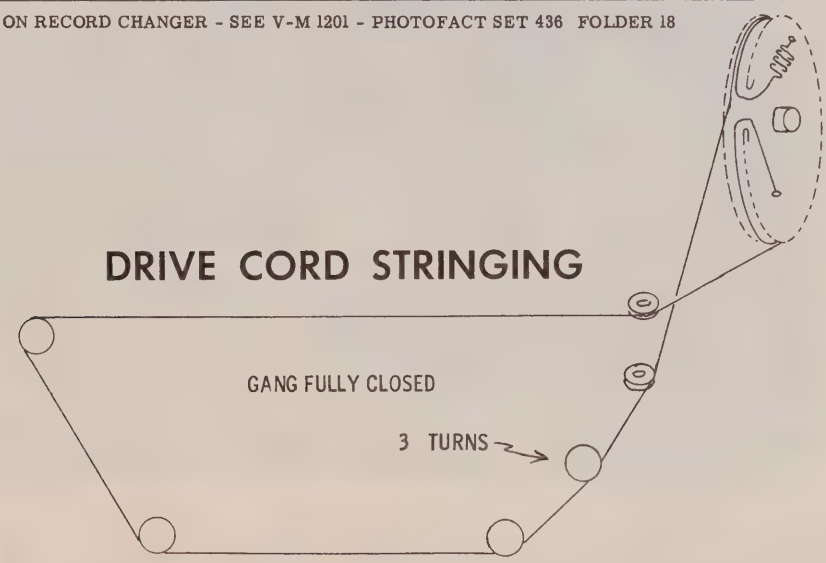
MODEL 571

V-M MODELS 570, 571

TRADE NAME	V-M Models 570, 571		
MANUFACTURER	V-M Corp., Benton Harbor, Michigan		
TYPE SET	AC Operated FM-AM Tuner And Amplifier With 4 Speed Automatic Record Changer		
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles	RATING	100 Watts, .9Amp. @117 Volts AC
TUNING RANGE-BROADCAST	550-1600KC	FREQ. MOD.	88 - 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE V-M 1201 - PHOTOFACT SET 436 FOLDER 18

DRIVE CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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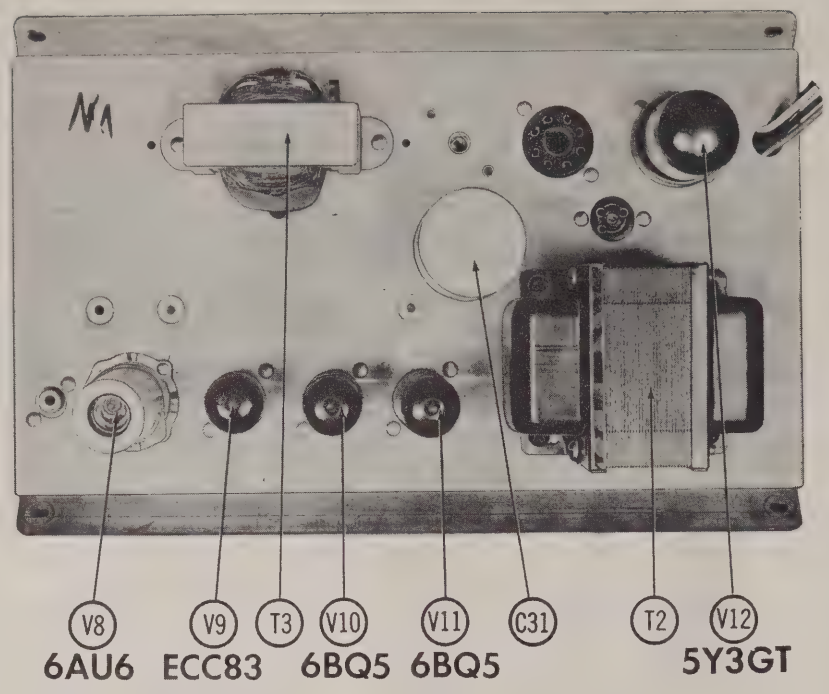
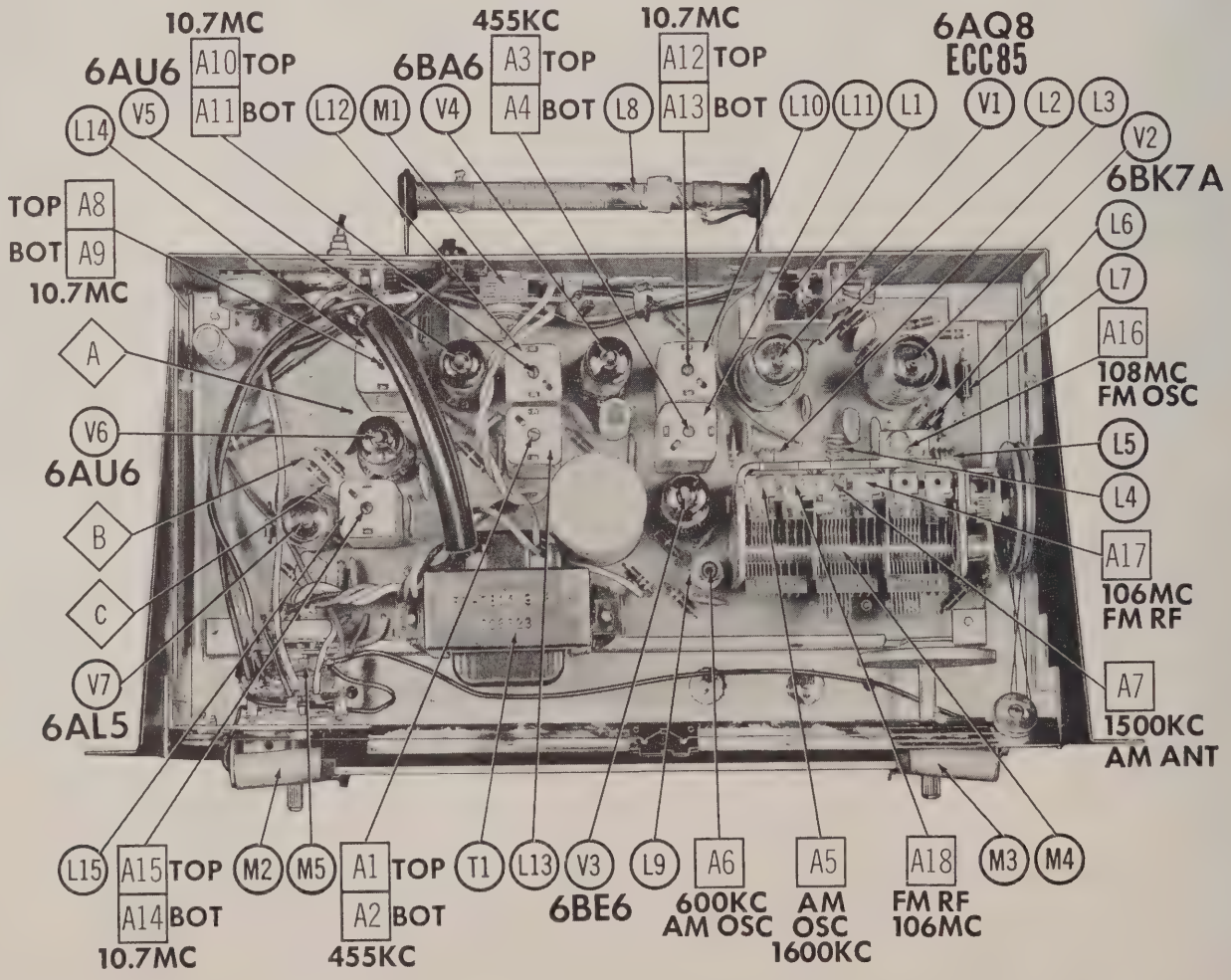
SET 442 FOLDER 15



AMP CHASSIS - TOP VIEW



TUNER CHASSIS TOP VIEW - ALIGN, INDUCTOR, TUBE, & MISC IDENT

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.1mfd	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	455KC (400~ Mod.)	AM	Point of non-interference	AC probe to audio output jack. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.		Loop	1600KC	"	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	600KC	"	Tune to 600KC signal	"	A6	"
4.		"	1500KC	"	Tune to 1500KC signal	"	A7	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.01mfd	High side to pin 7 (grid) of ECC85 (V1). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point (A). Common to chassis.	A8, A9, A10, A11, A12, A13	Adjust for maximum deflection.
6.	"	"	"	"	"	DC probe to point (B). Common to chassis.	A14	"
7.	"	"	"	"	"	DC probe thru 1meg to point (C). Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	.01mfd	High side to pin 7 (grid) of ECC83 (V1). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. amp. to point (A). Low side to chassis.	A8, A9, A10, A11, A12, A13	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
6.	"	"	"	"	"	Vert. amp. to point (B). Low side to chassis.	A14	"
7.	"	"	"	"	"	Vert. amp. thru 27K to point (C). Low side to chassis.	A15	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	270Ω Carbon Resistor	High side thru 270Ω to FM antenna terminal. Low side to chassis.	108MC (Unmod.)	FM	108MC	DC probe to point (A). Common to chassis.	A16	Adjust for maximum deflection.
9.	"	"	106MC	"	Tune to 106MC signal	"	A17, A18	"

The following step is unnecessary unless receiver fails to track properly.

10.	270Ω Carbon Resistor	High side thru 270Ω to FM antenna terminal. Low side to chassis.	88MC	FM	88MC	DC probe to point (A). Common to chassis.	L5	Adjust for maximum deflection by compressing or expanding coil turns while rocking tuning gang.

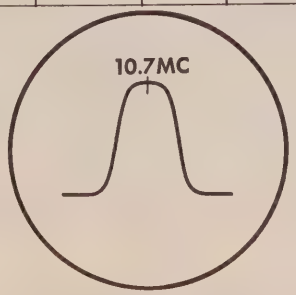


FIG. 1

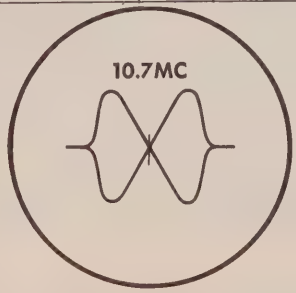
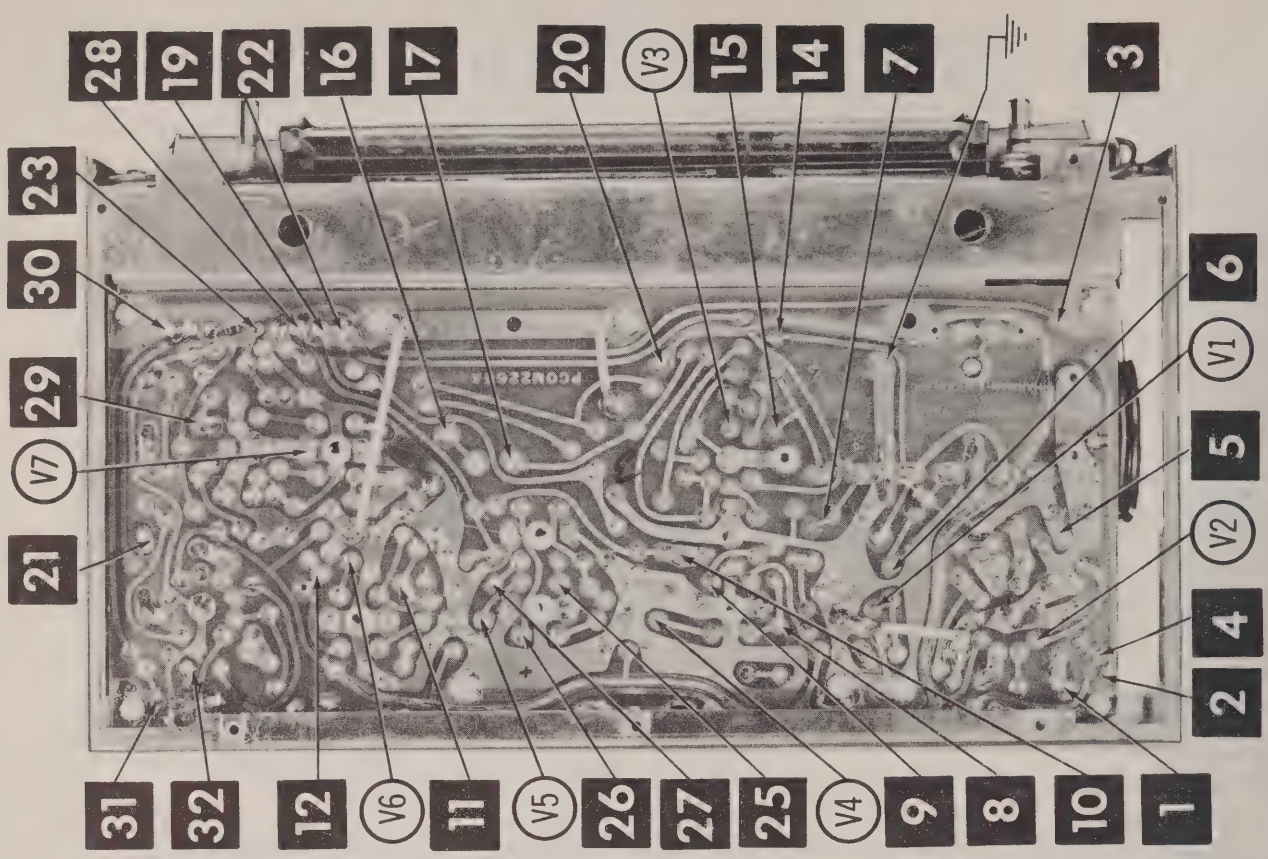


FIG. 2



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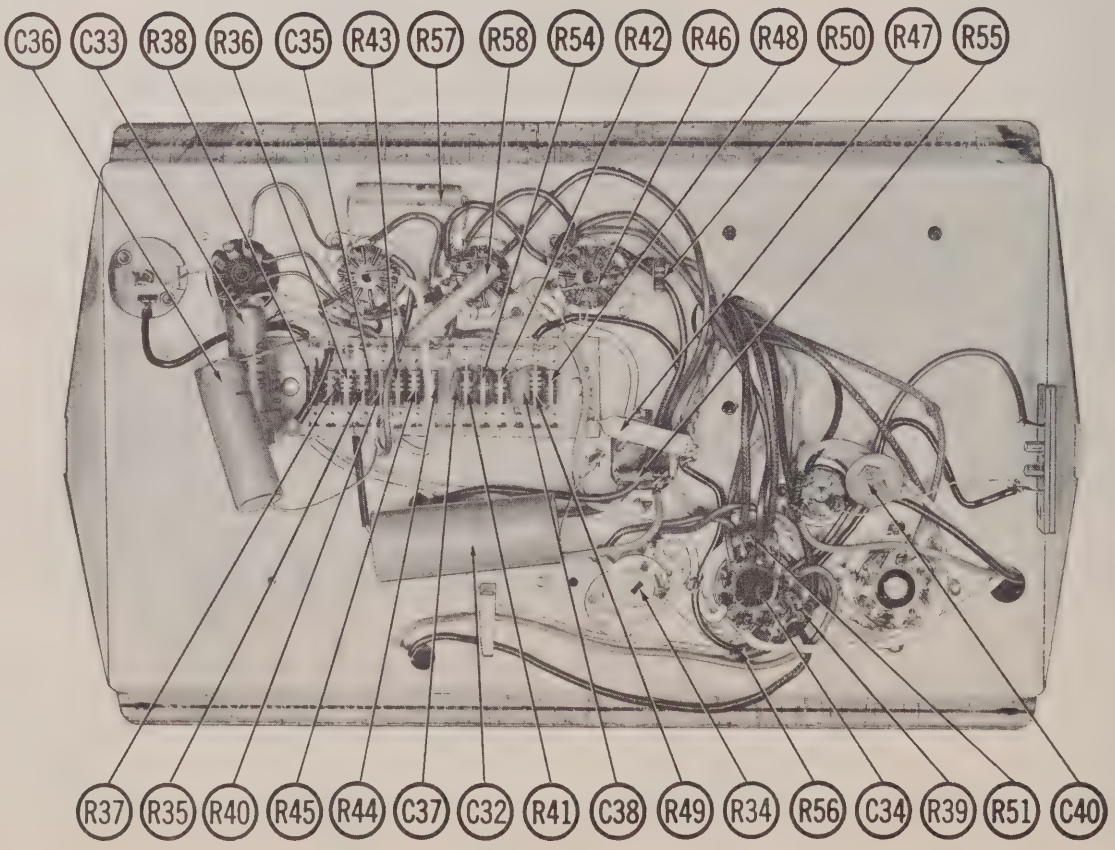
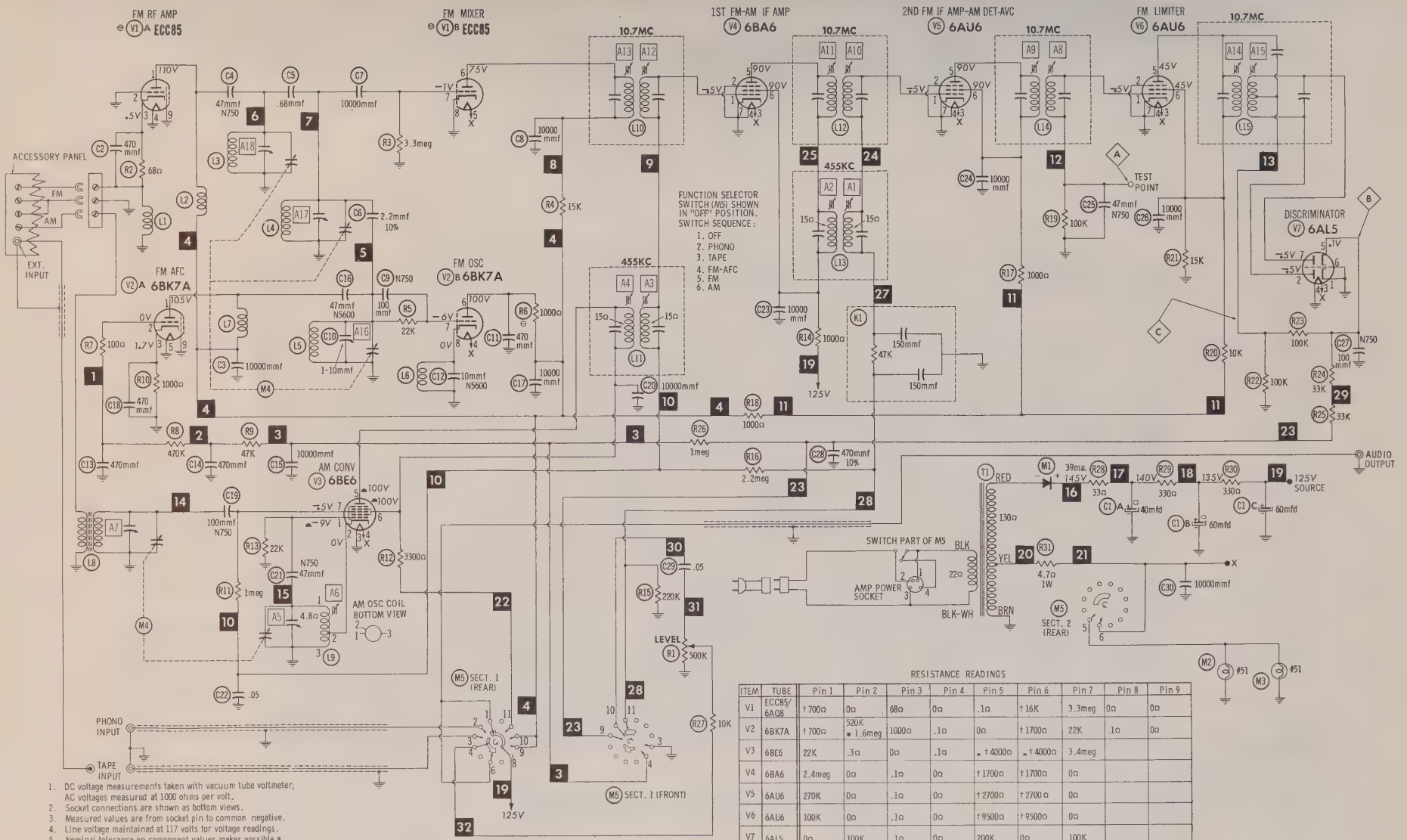
*TRADE MARK

PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



AMP CHASSIS - BOTTOM VIEW



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85/ 6AQ8	†700Ω	0Ω	68Ω	0Ω	.1Ω	†16K	3.3meg	0Ω	0Ω
V2	6BK7A	†700Ω	520K ▪ 1.6meg	1000Ω	.1Ω	0Ω	†1700Ω	22K	.1Ω	0Ω
V3	6BE6	22K	.3Ω	0Ω	.1Ω	-†4000Ω	-†4000Ω	3.4meg		
V4	6BA6	2.4meg	0Ω	.1Ω	0Ω	†1700Ω	†1700Ω	0Ω		
V5	6AU6	270K	0Ω	.1Ω	0Ω	†2700Ω	†2700Ω	0Ω		
V6	6AU6	100K	0Ω	.1Ω	0Ω	†9500Ω	†9500Ω	0Ω		
V7	6AL5	0Ω	100K	.1Ω	0Ω	200K	0Ω	100K		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
† MEASURED FROM OUTPUT OF M1.
- MEASURED IN "AM" POSITION.
▪ MEASURED IN "FM-AFC" POSITION.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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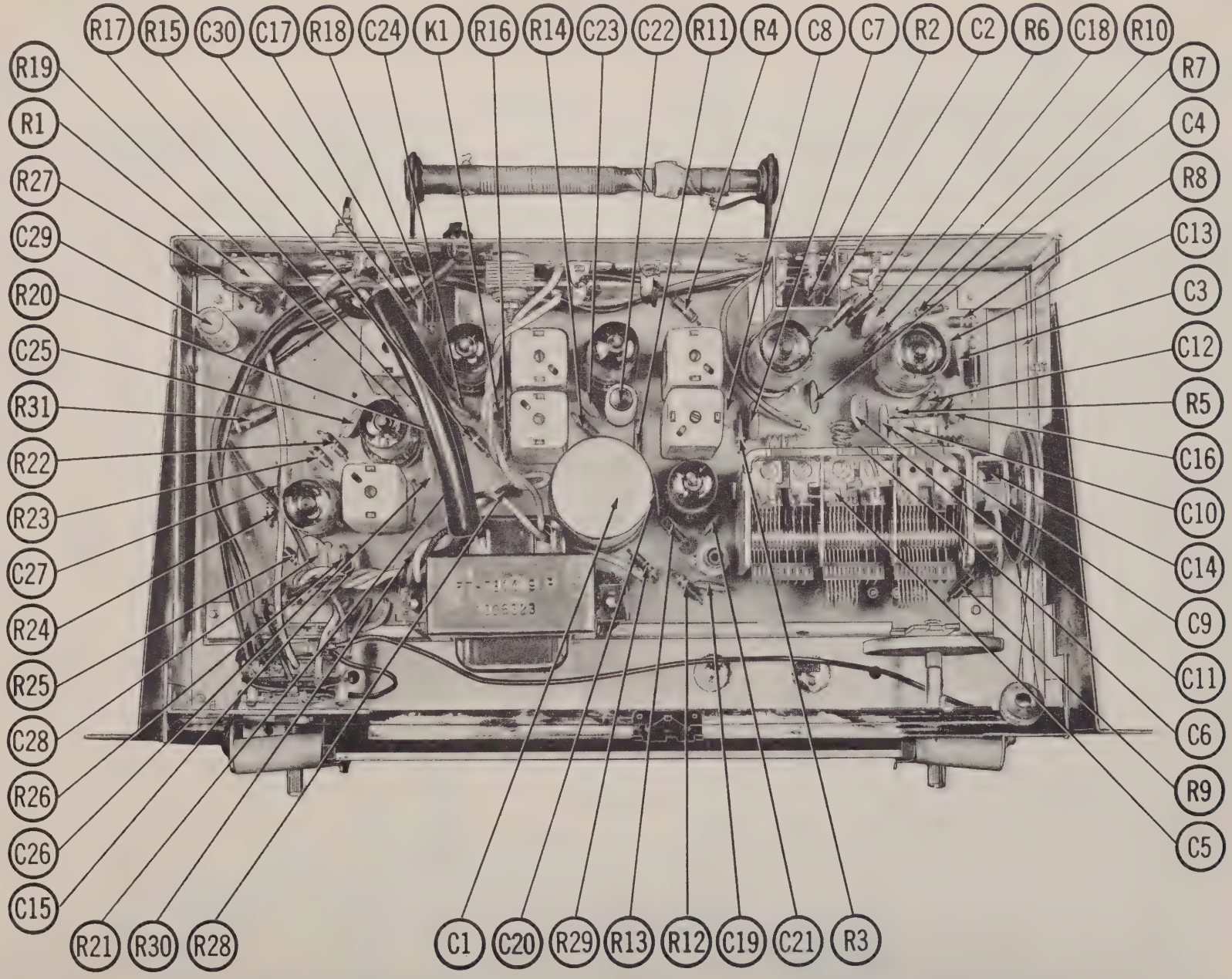
V-M MODELS 570, 571

TUNER SCHEMATIC

MODEL 570

V-M



TUNER CHASSIS TOP VIEW - CAPACITOR & RESISTOR IDENT

TUNER PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amp. -FM Mixer	ECC85/ 6AQ8	
V2	FM Osc. -FM AFC	6BK7A	
V3	AM Converter	6BE6	
V4	1st FM-AM IF Amplifier	6BA6	
V5	2nd FM IF Amp. -AM Det. -AVC	6AU6	
V6	FM Limiter	6AU6	
V7	Discriminator	6AL5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA V-M PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▪40	150	12102			PFP311, 53		PCL-3443, 5	
B	▲60	150							
C	60	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA V-M PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	470			12093	SI 470	DD-471	BYA10T47	B-347	5GA-T47	
C3	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C4	47		N750	12094	N750-SI 47	DTN-47	CTA6Q47C	CN7-447	5TCU-Q47	
C5	.68			12095						
C6	2.2		10%	12099	NPO-SI 2.2	TCZ-2R2	CTA6V22C	CNO-522	5TCCB-V22S 10%*	
C7	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C8	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C9	100		N750	12097	N750-DI 100	DTN-100	CTA6T1U	CN7-310	5TCU-T1	
C10	1-10			12100		829-10				
C11	470			12093	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C12	10		N5600	12098						
C13	470			12093	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C14	470			12093	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C15	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	47		N5600	12094						
C17	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C18	470			12093	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C19	100		N750	12097	N750-DI 100	DTN-100	CTA6T1U	CN7-310	5TCU-T1	
C20	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C21	47		N750	12094	N750-DI 47	DTN-47	CTA6Q47U	CN7-447	5TCU-Q47	
C22	.05	200		12101	P288N-05	DF-503	CUB2S5	GEM-415	2TM-S5	
C23	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C24	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C25	47		N750	12094	N750-DI 47	DTN-47	CTA6Q47U	CN7-447	5TCU-Q47	
C26	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C27	100		N750	12097	N750-DI 100	DTN-100	CTA6T1U	CN7-310	5TCU-T1	
C28	470		10%	12104	DI-470	DD-471		JL-347	5GA-T47S 10%*	
C29	.05	200		12101	P288N-05	DF-503	CUB2S5	GEM-415	2TM-S5	
C30	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	F-M PART No.	REPLACEMENT DATA
K1	AM Det. RF Filter	150mmf, 150mmf, 47K	PC781599	Aerovox PA-98 Centralab PC-51 Cornell-Dubiler 111TM2 Sprague D-2

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA V-M PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	RVCOM2380	AB-60	A47-500K-Z	B13-133	TA55A	Output Level
B	Shaft			AK-1	FKS-1/4	SK-2	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	V-M PART No.	NOTES
R2	68Ω		10453	
R3	3.3meg		11573	
R4	15K		11013	
R5	22K		11053	
R6	1000Ω		11073	
R7	100Ω		10493	
R8	470K		11373	
R9	47K		11133	
R10	1000Ω		10733-10	
R11	1meg		11453	
R12	3300Ω		10853	
R13	22K		11053	
R14	1000Ω		10733	
R15	220K		11293	
R16	2.2meg		11533	
R17	1000Ω		10733	
R18	1000Ω		10733	
R19	100K		11213-10	
R20	10K		10973	
R21	15K		11013	
R22	100K		11213-10	
R23	100K		11213-10	
R24	33K		11093-10	
R25	33K		11093-10	
R26	1meg		11453	
R27	10K		11973	
R28	33Ω		10373	
R29	330Ω		10613	
R30	330Ω		10613	
R31	4.7Ω	1	10174	

Note 1. Some versions may use 6800Ω in this application (Part #10933).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA V-M PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Ant. Coil	GC28831			4584		.24 Microhenry
L2	RF Choke	GC481454					3.3 Microhenries
L3	FM RF Coil	GL781543					
L4	FM Mixer Coil	GL781543					
L5	FM Osc. Coil	GL781544					
L6	Cathode Choke	GC24602	19-1000	BC-561	4602		1 Microhenry
L7	RF Choke	GC481454					3.3 Microhenries
L8	Loopstick	GL2442839					
L9	AM Osc. Coil	GL1121988					
L10	1st FM IF Trans.	GT781993	16-3490		1463-PC		
L11	1st AM IF Trans.	GT782122	16-6780	BC-356	13-PC1	RF-4	
L12	2nd FM IF Trans.	GT781994	16-3490		1463-PC		
L13	2nd AM IF Trans.	GT782123	16-6780	BC-357	13-PC2	RF-4	
L14	3rd FM IF trans.	GT781995	16-3490		1463-PC		
L15	Discriminator	GT782124	17-3491		1464-PC		

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	REPLACEMENT DATA V-M PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ .3A	120V@.039A Tap@6.3V@2.4A	FT781419B						

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA V-M PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	NOTES
M1	.039A	Z1362133 ①	1234AH ① HA154 ②		T065 ① SD-94 ②	65 ① K200 ②	① Selenium Type ② Silicon Type

MISCELLANEOUS

ITEM No.	PART NAME	V-M PART No.	NOTES
M2	Lamp	ZCOM2219	#51
M3	Lamp	ZCOM2219	#51
M4	Tuning Cap.	JV811553	FM-AM, 6 Section
M5	Switch	ER2302646	Function (Rotary Wafer Type) Includes Power-On-Off (Rotary Snap Type)
	Printed Board	PCOM2264A	

AMP PARTS LIST & DESCRIPTION (continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	V-M PART No.	REPLACEMENT DATA
K2	Tone Comp. Net	5000mmf, 5000mmf, 47K, 47K	12596	
K3	Tone Comp. Net	200mmf, 1000mmf, 1000mmf, 10000mmf, 10K, 220K, 100K	12570-1	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	V-M PART No.	ASTATIC PART No.		JENSEN PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M6	16708-B	13-TBX	13-TX			

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	V-M PART No.	JENSEN PART No.	WALCO PART No.	
M7	18626-B			

MISCELLANEOUS

ITEM No.	PART NAME	V-M PART No.	NOTES
M8	Lamp	7791	#1847
M9	Switch	599	Monaural-Stereo, SPDT (Slide Type)
M10	Switch	16694	Muting, DPST (Leaf Type)
M11	Switch	15120	Tuner-Phono, 3 PDT (Slide Type) Model 570
M12	Switch	15409	Acoustic Contour, SP3T (Rotary Wafer Type)
M13	Switch	467	Record Changer (Power On-Off)
M14	Motor	9134	
	Motor Assembly	18361	Complete (117 Volts, 60 Cycles)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

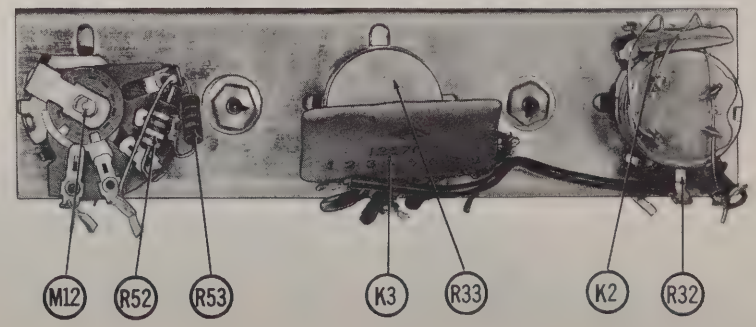
NAME	PART NO.	DESCRIPTION
Knob	15173-B	Tuning, Model 571 Only
Knob	18354-B	Bass, Volume
Knob	15135-B	Brilliance
Knob	15136-B	Acoustic Contour

CABINETS & CABINET PARTS (cont)

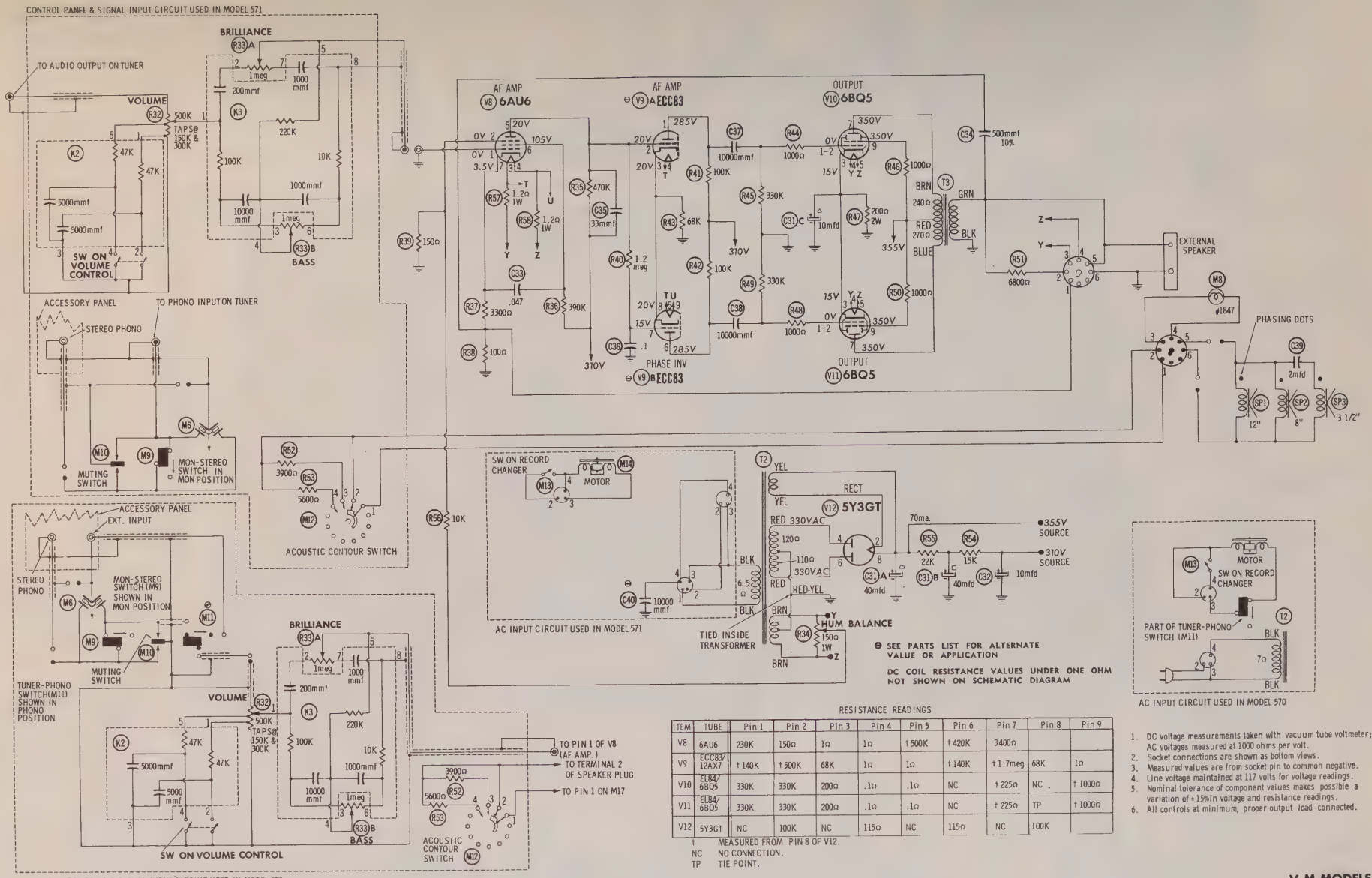
NAME	PART NO.	DESCRIPTION
Knob	15169-B	Function Selector, Model 571 Only
Knob	15133-B	Selector
Knob	16791-A46	On-Off-Reject
Knob	16792-A46	Speed Control
Button	15498	Reject, Includes Shaft
Cabinet	16867	"Contempo" (Specify Finish)
Cabinet	16987	"Capriccio" (Specify Finish)
Panel	16895	Control, Model 571 (Specify Finish)
Panel	16873	Control, Model 570 (Specify Finish)
Panel	16896	Accessory, Model 571
Panel	16890	Accessory, Model 570
Legs	16875	"Contempo" (Specify Finish)
Legs	16882	"Capriccio" (Specify Finish)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



CONTROL PANEL


CONTROL PANEL & SIGNAL INPUT CIRCUIT USED IN MODEL 571
BRILLIANCE
TO AUDIO OUTPUT ON TUNER
VOLUME
SW ON VOLUME CONTROL
BASS
ACCESSORY PANEL
TO PHONO INPUT ON TUNER
STEREO PHONO
MUTING SWITCH
MON-STEREO SWITCH IN MON POSITION
ACOUSTIC CONTOUR SWITCH
AF AMP V8 6AU6
AF AMP V9A ECC83
PHASE INV V9B ECC83
OUTPUT V10 6BQ5
OUTPUT V11 6BQ5
EXTERNAL SPEAKER
PHASING DOTS
SW ON RECORD CHANGER
MOTOR
AC INPUT CIRCUIT USED IN MODEL 571
TIED INSIDE TRANSFORMER
RECT V12 5Y3GT
355V SOURCE
310V SOURCE
HUM BALANCE
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ACCESSORY PANEL
EXT. INPUT
MON-STEREO SWITCH (M9) SHOWN IN MON POSITION
TUNER-PHONO SWITCH (M11) SHOWN IN PHONO POSITION
TO PIN 1 OF V8 (AF AMP.)
TO TERMINAL 2 OF SPEAKER PLUG
TO PIN 1 ON M17
CONTROL PANEL & SIGNAL INPUT CIRCUIT USED IN MODEL 570
PART OF TUNER-PHONO SWITCH (M11)
AC INPUT CIRCUIT USED IN MODEL 570

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V8	6AU6	230K	150Ω	1Ω	1Ω	†500K	†420K	340Ω		
V9	ECC83/ 12AX7	†140K	†500K	68K	1Ω	1Ω	†140K	†1.7meg	68K	1Ω
V10	EL84/ 6BQ5	330K	330K	200Ω	.1Ω	.1Ω	NC	†225Ω	NC	†1000Ω
V11	EL84/ 6BQ5	330K	330K	200Ω	.1Ω	.1Ω	NC	†225Ω	TP	†1000Ω
V12	5Y3GT	NC	100K	NC	115Ω	NC	115Ω	NC	100K	

† MEASURED FROM PIN 8 OF V12.
NC NO CONNECTION.
TP TIE POINT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

CONTROL PANEL & SIGNAL INPUT CIRCUIT USED IN MODEL 570

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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V-M MODELS 570, 571

AMP SCHEMATIC

AMP PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V8	AF Amplifier	6AU6	
V9	AF Amp. -Phase Inv.	ECC83/ 12AX7	
V10	Output	6BQ5	
V11	Output	6BQ5	
V12	Rectifier	5Y3GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA V-M PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C31A	▲40	450	1212	AFH3-133	C1070	FP346	TMT-133	TVL-3744	
B	■40	450							
C	▲10	25							
C32	10	400	12106	PRS450V10	BR1045	TC72	TD-10-450	TVA-1705	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA V-M PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C33	.047	400		12009	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C34	500		10%	12064-10	DI-500	MD-501			5GA-T5S 10%*	
C35	33			12047	BPD-000033	DD-330	L10Q33	B-433	5GA-Q33	
C36	.1	400		12008	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C37	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C38	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C39	2	100		12069						
C40	10000			12096	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	①

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Used in Model 571 only.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA V-M PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R32A	500K	½	12348					Volume, Taps @ 150K, 300K
B	Switch							Loudness
R33A	1meg	½	12347	F1-52			† UF3833	Brilliance
B	1meg	½		R2-52				Bass
R34A	150Ω	1WW	12361	WN-201	A43-150			Hum Balance
B	Shaft			AK-30	FKS-1/4			

† "STA-LOC" equivalent: FB16A, OS812, RU16A, IS1187.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	V-M PART No.	NOTES
R35	470K		11373	
R36	390K		11353-10	
R37	3300Ω		10853	
R38	100Ω		10493	
R39	150Ω		10533	
R40	1. 2meg		11473-10	
R41	100K		11213-10	
R42	100K		11213-10	
R43	68K		11173-10	
R44	1000Ω		10733	
R45	330K		11333	
R46	1000Ω		10733-10	
R47	200Ω	2	12338-10	
R48	1000Ω		10733	
R49	330K		11333	
R50	1000Ω		10733-10	
R51	6800Ω		10933-10	
R52	3900Ω		10873-10	
R53	5600Ω		10913-10	
R54	15K		11013	
R55	22K		11053	
R56	10K		10973	
R57	1. 2Ω	1	12365-10	
R58	1. 2Ω	1	12365-10	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	RATING SEC. 4	RATING SEC. 5	REPLACEMENT DATA V-M PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	117V @ .6A	680 VCT @ .070A	5V @ 2A	6.3 VCT @ 2.1A			12580	P9306①			PC8408①	24R02U①	R-11A①

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA V-M PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T3	4500Ω CT	1-2Ω	12581	Z1011	A-2905	AU-609	A-3870	22S62	S-55X	

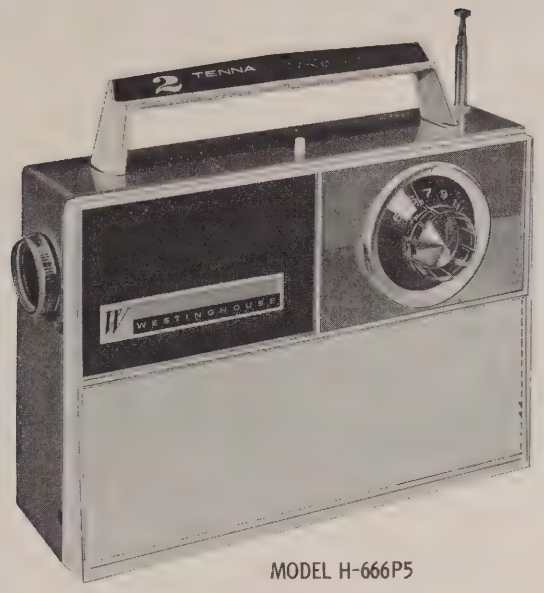
SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA V-M PART No.	QUAM PART No.	NOTES
SP1	12"	PM	3-4Ω	18560	12AGA	
SP2	8"	PM	3-4Ω	18559	8A31	
SP3	3½"	PM	8-10Ω	18558	3A15TZ9.8	

PHOTOFACT* Folder with CIRCUITRACE*

WESTINGHOUSE MODELS H-666P5, H-667P5 (Ch. V-2394-3)

WESTINGHOUSE MODELS H-666P5, H-667P5 (Ch. V-2394-3)



MODEL H-666P5

TRADE NAME	Westinghouse Models H-666P5, H-667P5 (Ch. V-2394-3)
MANUFACTURER	Westinghouse Electric Corp., TV-Radio Div., Metuchen, N. J.
TYPE SET	Three Power Portable AM Receiver
TUBES	Five
POWER SUPPLY	110-120 Volts AC-DC (or) 9 Volts DC "A" Supply & 90 Volts DC "B" Supply
RATING	12 Watts, .11 Amp. @ 117 Volts AC (or) 56MA @ 9 Volts DC & 11.5MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540 - 1625KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1mfd capacitor in series with low side of the signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3, A4.....GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6, A7.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A8, A9.....GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 6 (grid) of 1R5 (V2). Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200mmf to reduce hum modulation.
2.	15mmf	High side to point A Low side to chassis.	1625KC	"	"	A5	"
3.	"	"	1400KC	1400KC	"	A6, A7	"
4.	"	"	600KC	600KC	"	A8, A9	"

DISASSEMBLY

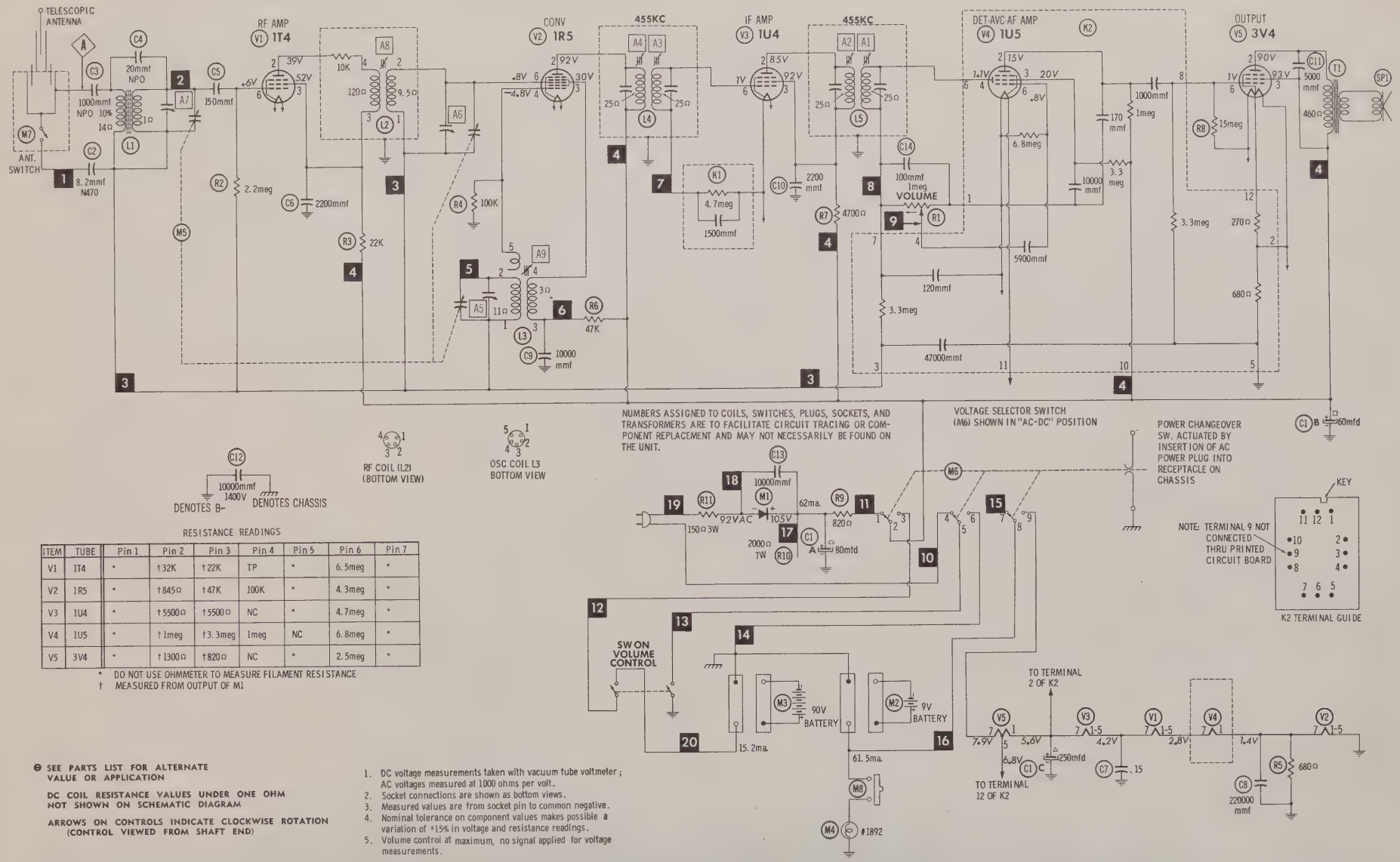
1. Open the case by pressing two buttons on either side of the cabinet.
2. Disconnect and free the battery leads.
3. Remove two screws holding AC receptacle.
4. Unsolder the telescoping antenna lead (from loop end of C3, 1000mmf).
5. Remove volume control knob from shaft. Knob is captive and remains with cabinet.
6. Remove three screws holding chassis bracket to cabinet top.
7. Press dial light button into the cabinet and pull assembly out from the cabinet.
8. Slide chassis from cabinet.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of H997

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

SET 442 FOLDER 16


TELESCOPIC ANTENNA
ANT. SWITCH
RF AMP V1 1T4
CONV V2 1R5
455KC
IF AMP V3 1U4
455KC
DET-AVC-AF AMP V4 1U5
OUTPUT V5 3V4
VOLUME
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.
VOLTAGE SELECTOR SWITCH (M6) SHOWN IN "AC-DC" POSITION
POWER CHANGEOVER SW. ACTUATED BY INSERTION OF AC POWER PLUG INTO RECEPTACLE ON CHASSIS
DENOTES B-
DENOTES CHASSIS
RF COIL (L2) (BOTTOM VIEW)
OSC COIL L3 BOTTOM VIEW
SW ON VOLUME CONTROL
90V BATTERY
9V BATTERY
TO TERMINAL 2 OF K2
TO TERMINAL 12 OF K2
KEY
K2 TERMINAL GUIDE
NOTE: TERMINAL 9 NOT CONNECTED THRU PRINTED CIRCUIT BOARD

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	1T4	*	†32K	†22K	TP	*	6.5meg	*
V2	1R5	*	†845Ω	†47K	100K	*	4.3meg	*
V3	1U4	*	†5500Ω	†5500Ω	NC	*	4.7meg	*
V4	1U5	*	†1meg	†3.3meg	1meg	NC	6.8meg	*
V5	3V4	*	†1300Ω	†820Ω	NC	*	2.5meg	*

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE
† MEASURED FROM OUTPUT OF M1

❸ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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WESTINGHOUSE MODELS H-666P5, H-667P5 (Ch. V-2394-3)

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	1T4	
V2	Converter	1R5	
V3	IF Amplifier	1U4	

ITEM No.	USE	TYPE	NOTES
V4	Det. - AVC - AF Amp.	1U5	
V5	Output	3V4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Westinghouse PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▬80	150	218V025H18			WT407		VLS-3423 *	
B	■60	150							
C	▲250	15							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Westinghouse PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	8.2		N470	215V300H46						
C3	1000		NPO 10%	215V111A02						
C4	20		NPO		NPO-DI 20	DTZ-20	C10Q2C		5TCC-Q2	Note 1
C5	150			215V101A51	BPD-00015	DD-151	L10T15	B-315	5GA-T15	
C6	2200			215V112A22	BPD-0022	DD-222	BYA10D22	B-222	5HK-D22	
C7	.15	200		210V111H08	P288N-15		CUB2P15	GEM-2015	2TM-P15	
C8	220000			215V309H01						
C9	10000			215V111A03	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C10	2200			215V112A22	BPD-0022	DD-222	BYA10D22	B-222	5HK-D22	
C11	5000			215V308H04	BPD-005	DD-502	BYA10D5	B-250	5GA-D5	
C12	10000	1400		215V306H03	DAC-27	DD16-103		2HV-110	20HKB-S1	
C13	10000			215V111A03	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C14	100			215V111A01	BPD-0001	DD-101	L10T1	UC-531	5GA-T1	

Note 1. Some versions may use 15mmf in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Westinghouse PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	1meg	½	270V027H06					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Westinghouse PART No.	NOTES
R2	2.2meg		250V232A25	
R3	22K		250V222A23	
R4	100K		250V231A04	
R5	680Ω		250V226A81	
R6	47K		250V234A73	

ITEM No.	RATING OHMS	RATING WATT	Westinghouse PART No.	NOTES
R7	4700Ω		250V234A72	
R8	15meg		250V221A56	
R9	820Ω		250V228A21	
R10	2000Ω	7	251V026H01	
R11	150Ω	3	251V020H55	

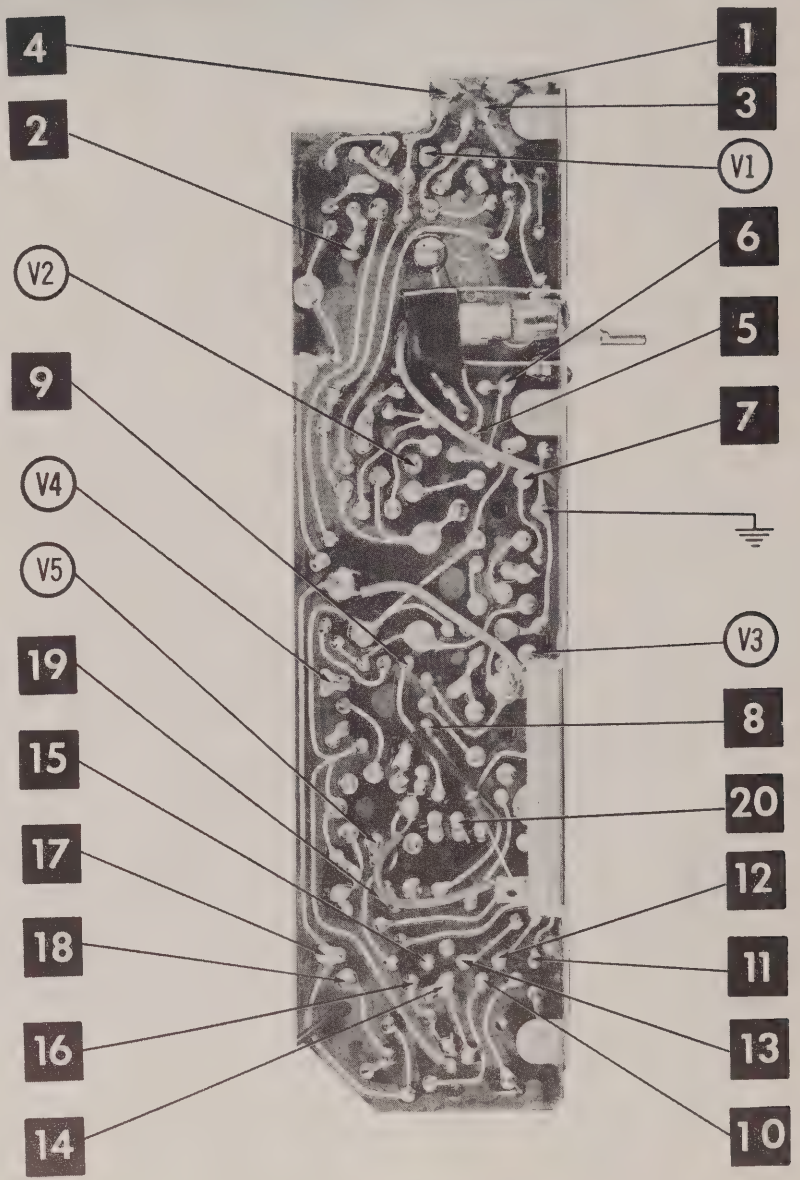
COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Westinghouse PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Loop Stick	310V031H02					
L2	RF Trans.	230V064H01					Includes 10K resistor
L3	Osc. Coil	230V067H02					
L4	Input IF	235V043H01	16-6780	BC-356	13-PC1	RF-4	
L5	Output	235V043H02	16-6780	BC-357	13-PC2	RF-4	

PRINTED BOARD

A Howard W. Sams CIRCUITRACE* Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Westinghouse PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	9600Ω	3-4Ω	Part of SP1		A-2998		A-3329	24S83	S-11X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Westinghouse PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	570V050H01①	4A07	① Includes T1

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Westinghouse PART No.	REPLACEMENT DATA
K1 K2	IF Grid Bias Det. - Audio Circuitry	4.7meg, 1500mmf 1000mmf, 170mmf, 10000mmf, 5900mmf, 120mmf, 47000mmf, 1meg, 3.3meg, 3.3meg, 6.8meg, 3.3meg, 270Ω, 680Ω	219V004H01 219V026H01	Sprague PRC-8

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	Westinghouse PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.062A	295V014H01	1234AH HE154U1①	T065 SD-94 ①	65S K200 ①	① Silicon Type

BATTERIES

ITEM No.	VOLTAGE	Westinghouse PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M2 M3	9V 90V		D6	P60	276	479	M-1603	M214	

MISCELLANEOUS

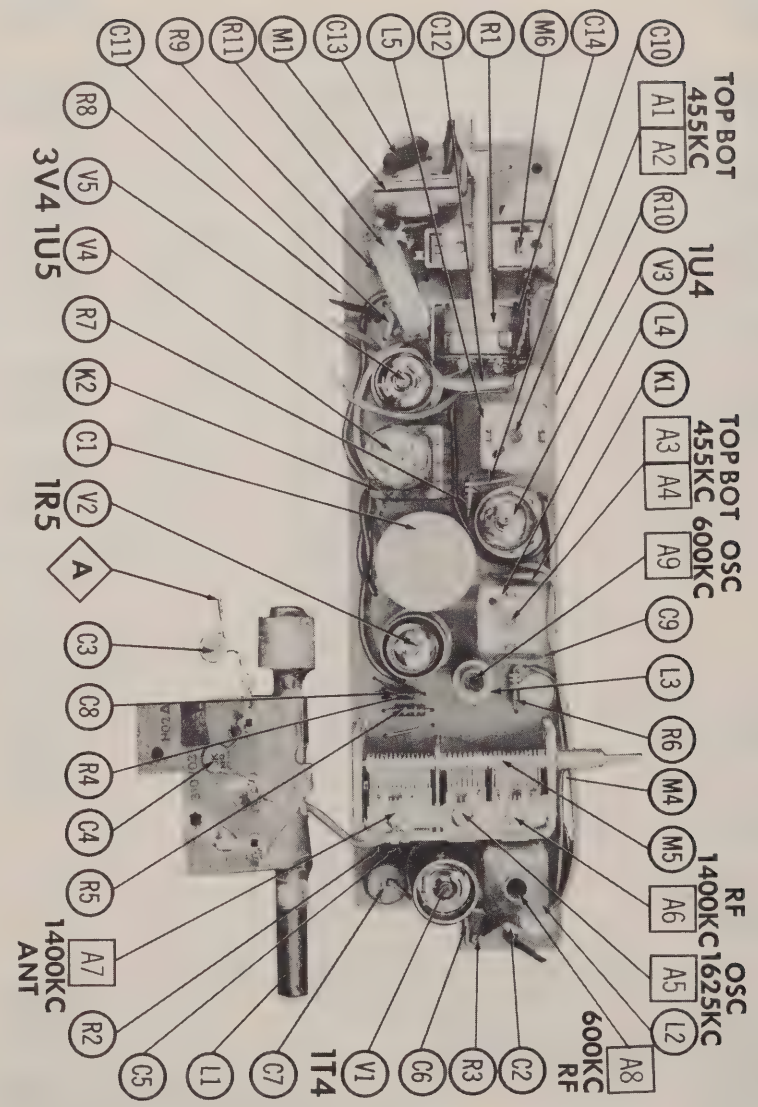
ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M4	Lamp	756V501H08	#1892
M5	Tuning Cap.	330V021H01	3 Gang
M6	Switch	756V030H01	AC-DC-Battery, 3PDT, (Plug Acctuated, Spring Return Type)
M7	Switch	318V004H01	Telescopic Antenna, On-Off, SPST (Leaf Spring Type) Includes Telescopic Antenna
M8	Switch	778V103H01	Pilot Light, On-Off, SPST (Leaf Spring Type) Part of Button Rivet Assembly

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	550V088H01	Tuning
Knob	550V096H01	Volume-On-Off
Knob	550V087H01	Dial
Cabinet	513V028H06	Less Handle, Model H-666P5
Cabinet	513V028H07	Less Handle, Model H-667P5
Handle	558V159H01	
Antenna	318V004H01	Telescoping (Includes M7)

CHASSIS—TOP VIEW



WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

**WILCOX-GAY
MODEL CL622**

WILCOX-GAY
MODEL CL622

WILCOX-GAY
MODEL CL622

GENERAL INFORMATION

The Wilcox-Gay "Recordio" Model CL622 is designed for magazine loading, and is automatic in both loading and unloading of tape, completely eliminating tape threading.

A mobius loop is employed on the magazine to double the playing time. A timing index is provided on the magazine to help locate a selection on the tape.

The high frequency (approximately 60KC) erase head automatically removes previous recordings when switched to record position. A safety record lock is provided so that tape previously recorded cannot be unintentionally erased.

Recordings can be made from an external radio, phonograph, or television in addition to those made from the microphone.

This recorder is designed to operate from a 117 volt, 60 cycle, AC supply. Serious damage to the unit will result if connection is made to a DC supply.

Manufactured by:
Wilcox-Gay Corporation
Charlotte, Michigan

This material compiled and published by

HOWARD W. SAMS & CO., INC., INDIANAPOLIS 6, INDIANA

C385

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OPERATING INSTRUCTIONS

Preparing For Operation

1. Remove AC cord, magazine, and microphone from storage compartment.

2. Insert AC cord into a convenient wall receptacle of the proper rating and into AC input on cabinet.

IMPORTANT: Before switching recorder off, always release magazine. If magazine is left engaged while recorder is off, flat spots may develop on pinch roller. Should a magazine be released when motor is not running, a loop of tape may be pulled from the magazine and will be difficult to reinsert into the recorder.

To Load and Unload A Magazine

1. To insert a magazine into recorder: place magazine into opening provided and push forward until mechanism engages magazine.

2. To release a magazine: pull magazine release lever (on left side of recorder) toward front of recorder until mechanism releases magazine.

To Record from Microphone

1. Turn On-Off-Volume control to right until a click is heard and allow recorder to warm up. The record level indicator will glow when unit is operating properly.

2. Depress Record Lock button with right hand while turning function knob to Record with left hand.

3. Adjust Volume control while speaking into microphone until record level indicator magic eye just barely closes.

4. The Tone control does not operate while recorder is in Record. When recording from radio or TV receiver, the radio or TV tone control should be set for maximum treble.

To Record From Radio Or Television Receiver

1. Insert patch cord plug into Radio P. A. Phone input.

2. Connect cord clip across voice-coil terminals on radio or TV speaker.

3. Set tone control on radio or TV to maximum treble, and volume control at a little less than normal listening volume.

4. Proceed with recording as described under "To Record from Microphone."

To Record From Phonograph

1. Insert patch cord plug into Radio P. A. Phone input.

2. Connect cord clips to phonograph pickup terminals.

NOTE:: Always connect clip attached to black wire to grounded side of phonograph.

3. Proceed with recording as described under "To Record from Microphone."

To Erase Tape

When the function knob is turned to Record, play-record head (48) is automatically operating. To erase material no longer needed without recording, switch recorder to Record and turn Volume control to minimum.

To Play Recordings

1. Place function knob in Play.

2. Insert magazine into opening provided and push forward until mechanism engages magazine.

3. Adjust Volume and Tone controls for desired listening level.

DISASSEMBLY INSTRUCTIONS

To Remove Unit From Case

1. Remove four Phillips head screws from storage compartment.

2. Remove six Phillips head screws from top plate.

3. Remove six Phillips head wood screws from bottom of case; remove grille.

4. Reach in and remove transformer plug and speaker leads.

5. Lift unit from case.

To Remove Amplifier from Tape Transport

1. Remove power transformer plug from amplifier chassis.

2. Remove two motor leads.

3. Remove four leads from play-record head terminal lugs.

4. Remove two slotted-head machine screws from each end of amplifier chassis.

5. Remove microphone jack

6. Remove two leads from Radio-Phono jack.

7. Carefully lift amplifier away

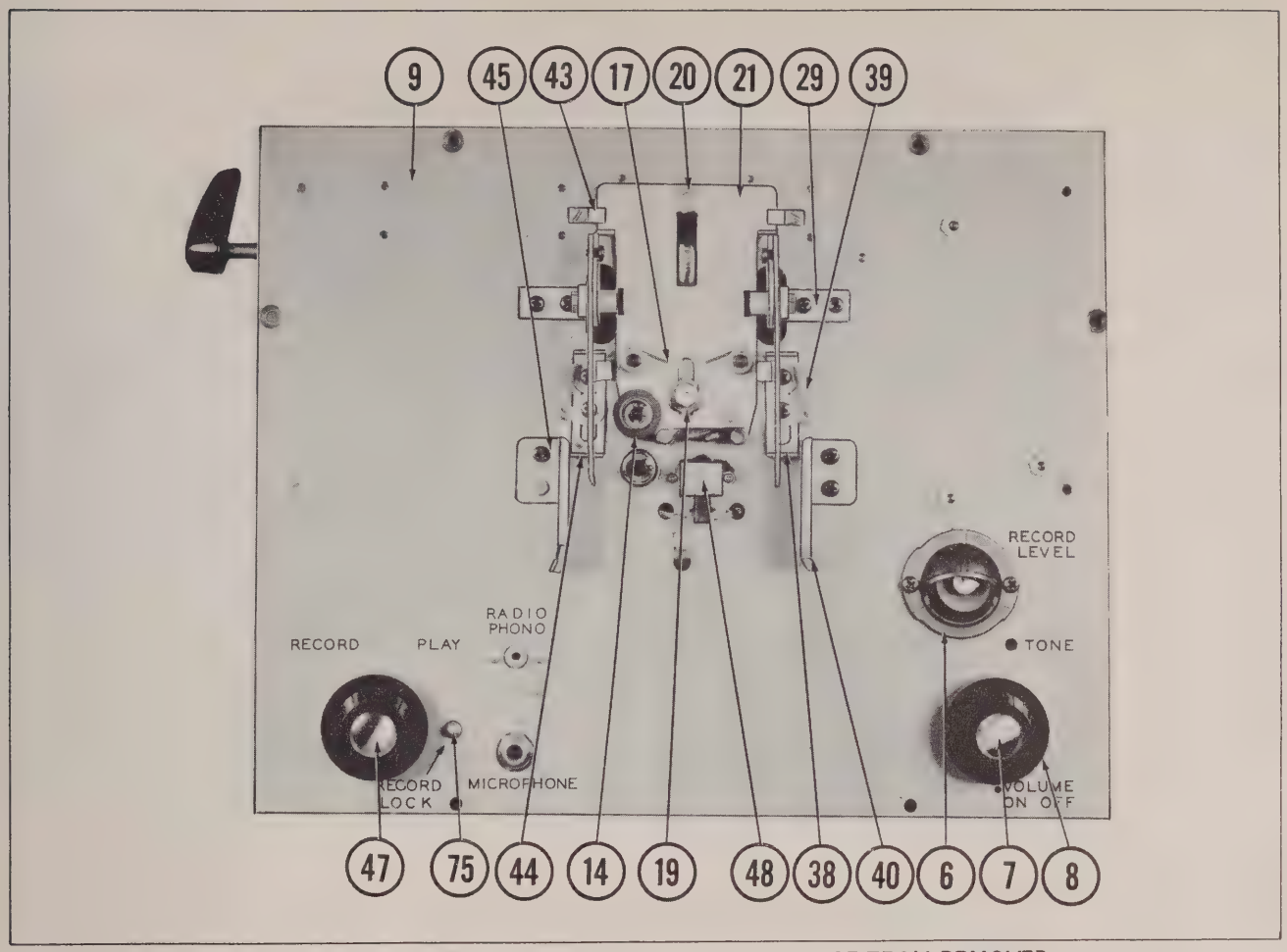


FIG. 1 TOP VIEW OF MECHANISM WITH STORAGE TRAY REMOVED

MECHANICAL ADJUSTMENTS

Pressure Pad (Refer to Exploded View)

1. Remove storage assembly tray (3).
2. Place function knob in Play. Do not turn recorder on.
3. Adjust pressure pads (25) by bending pressure pad springs (24). Pressure pads (25) must be adjusted for minimum pressure against tape.

Cam

1. Remove unit from case, as described under "To Remove Unit from Case."
2. Turn Release knob to see proper position of cams (66).
3. Cams (66) should release both finger assemblies (27) and (49) and slide plate (21).
4. Adjust cams (66) by loosening set screw (67) and rotating cams (66) on shaft.

Both cams are properly adjusted when both finger assemblies (27) and (49) are released and slide plate (21) is away from pinch roller (14).

ELECTRICAL ADJUSTMENTS

Bias

1. Set line voltage at 117 volts.
2. Place unit in Record and turn Volume control to maximum.
3. Connect 100-ohm carbon resistor in series with yellow lead on play-record head (48).
4. Connect AC VTVM across 100 ohms. Use low AC scale. Adjust C25 for 0.125 volts.

NOTE: Bias frequency approximately 60 kc.

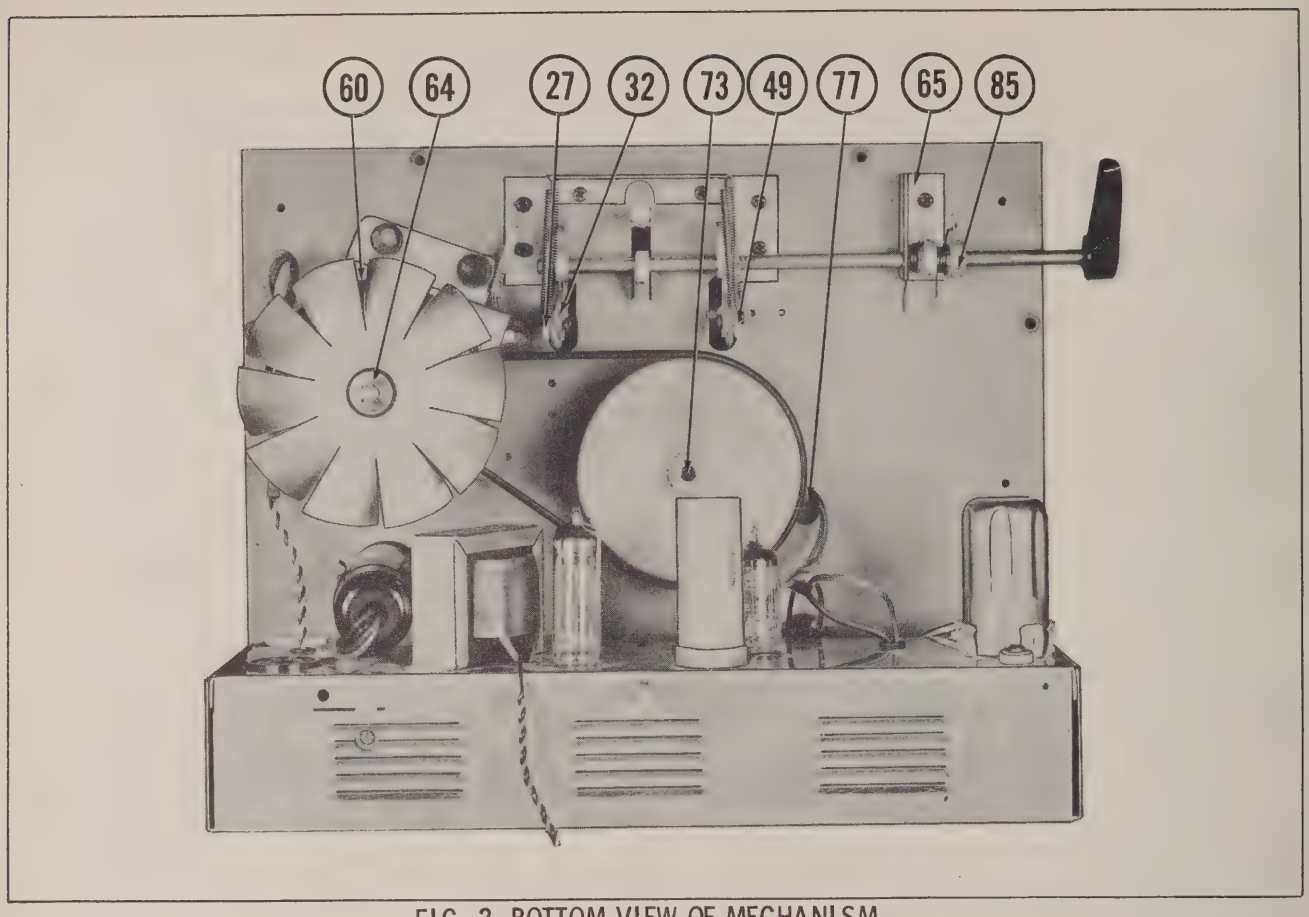


FIG. 2 BOTTOM VIEW OF MECHANISM

Play-Record

Remove storage tray assembly (3). Clean pole pieces of play-record head (48) with a good commercial head cleaning agent, naptha, or alcohol. Proceed as follows:

1. Load a prerecorded tape on recorder. Connect VTVM to External Speaker jack. Set VTVM for AC volts, 3-volt range.
2. Place unit in Play.
3. Rotate play-record head adjustment screw (48A) until maximum point of deflection is found.

CLEANING

Most defects, other than wear or breakage, can be traced to dirty surfaces. Play-record head (48), capstan, and pinch roller (14) may accumulate tape coating oxide, worn off the tape as it passes these parts. This accumulation should be removed periodically since it will cause faint recording and poor playback. Wipe these surfaces carefully with a clean cloth. If dirt is caked or hard and does not come off with a dry cloth, dampen cloth slightly with alcohol.

LUBRICATION

All rotating parts have factory-lubricated oilite bearings. Under normal use, no further lubrication is necessary. In heavy-duty service, the following parts should be lubricated once a year with a drop of #10 motor oil:

1. Top and bottom motor bearing.
2. Capstan bearing.
3. Pinch roller (14) bearing.

Do not overlubricate. Oil must be kept off rubber belt, flywheel periphery, and any parts that might transfer oil to them. Always wipe excess oil from lubricated parts.

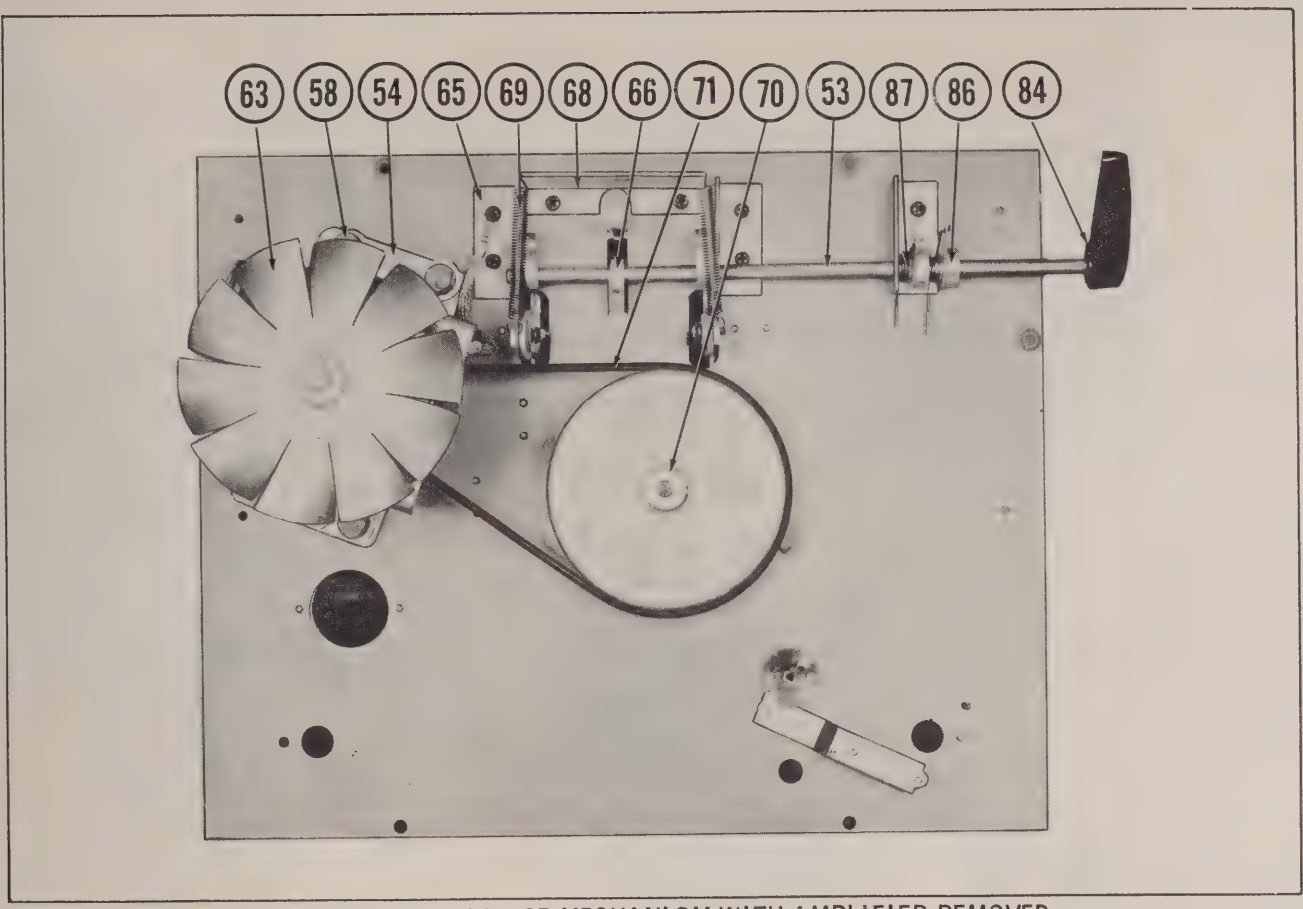


FIG. 3 BOTTOM VIEW OF MECHANISM WITH AMPLIFIER REMOVED

TROUBLE CHART

Symptom	Cause	Remedy
No drive in Play or Record.	1. Belt (71) broken or loose.	1. Replace belt (71).
	2. Slide plate (21) binds.	2. Check slide plate (21) for burrs.
	3. Plate return spring (17).	3. Connect or replace spring (17).
	4. Defective motor (60).	4. Replace motor (60).
	5. Motor pulley (76) loose.	5. Tignten set screw (88).
Wow.	1. Pinch roller (14) not making proper contact.	1. Adjust pinch roller (14) for proper tension.
	2. Oil or foreign matter on driving surfaces.	2. Remove any oil or foreign matter with a clean cloth and alcohol.
Flutter.	1. Dirty play-record head (48), pressure pads (25), capstan shaft, or pinch roller (14).	1. Clean, as described under "Cleaning."
No erase, or incomplete erase.	1. Play-record head (48) leads broken or disconnected.	1. Connect leads, and solder.
	2. Defective play-record head (48).	2. Replace play-record head (48).

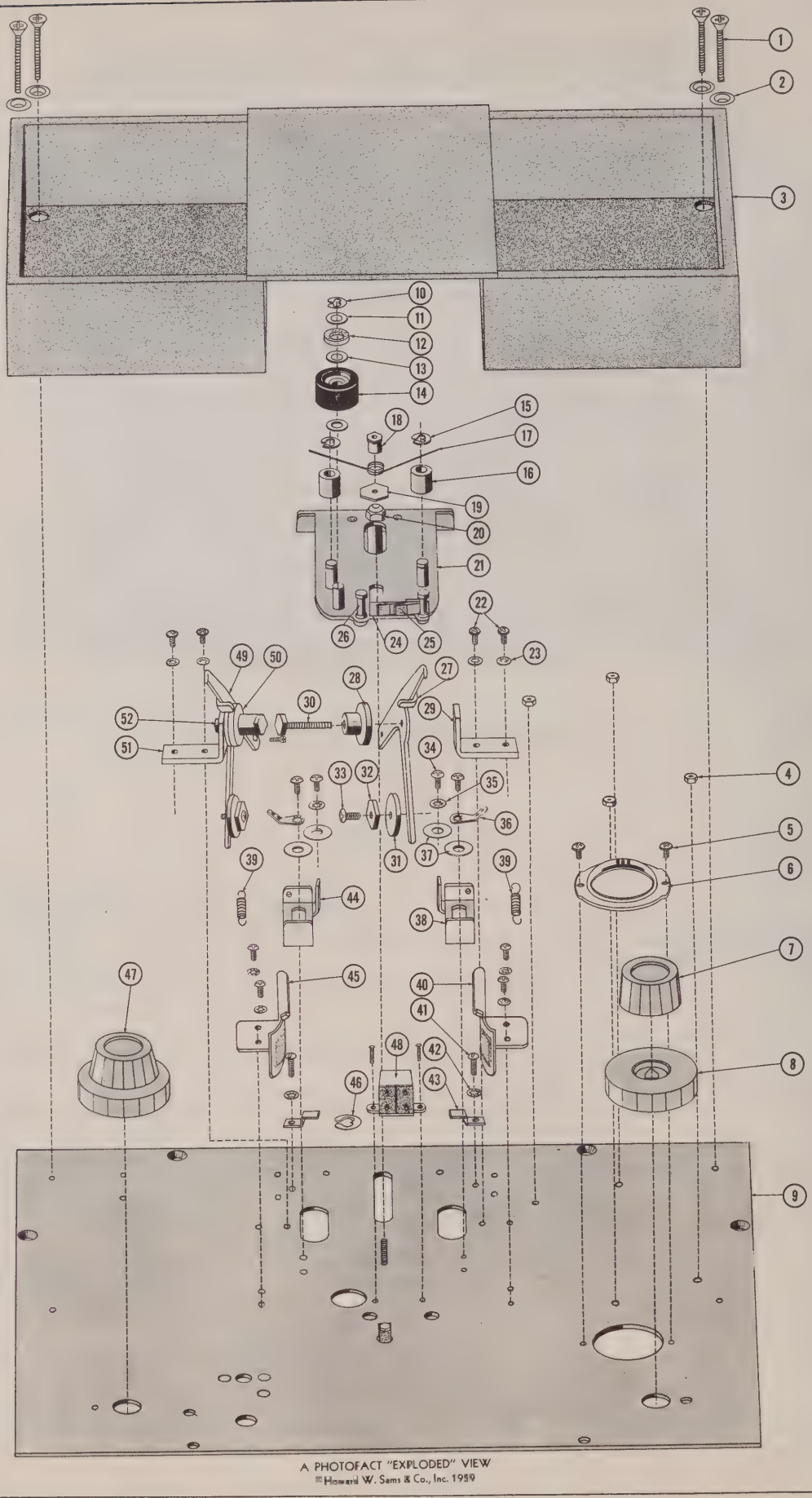


FIG. 4A EXPLODED VIEW OF PARTS ABOVE BASEPLATE

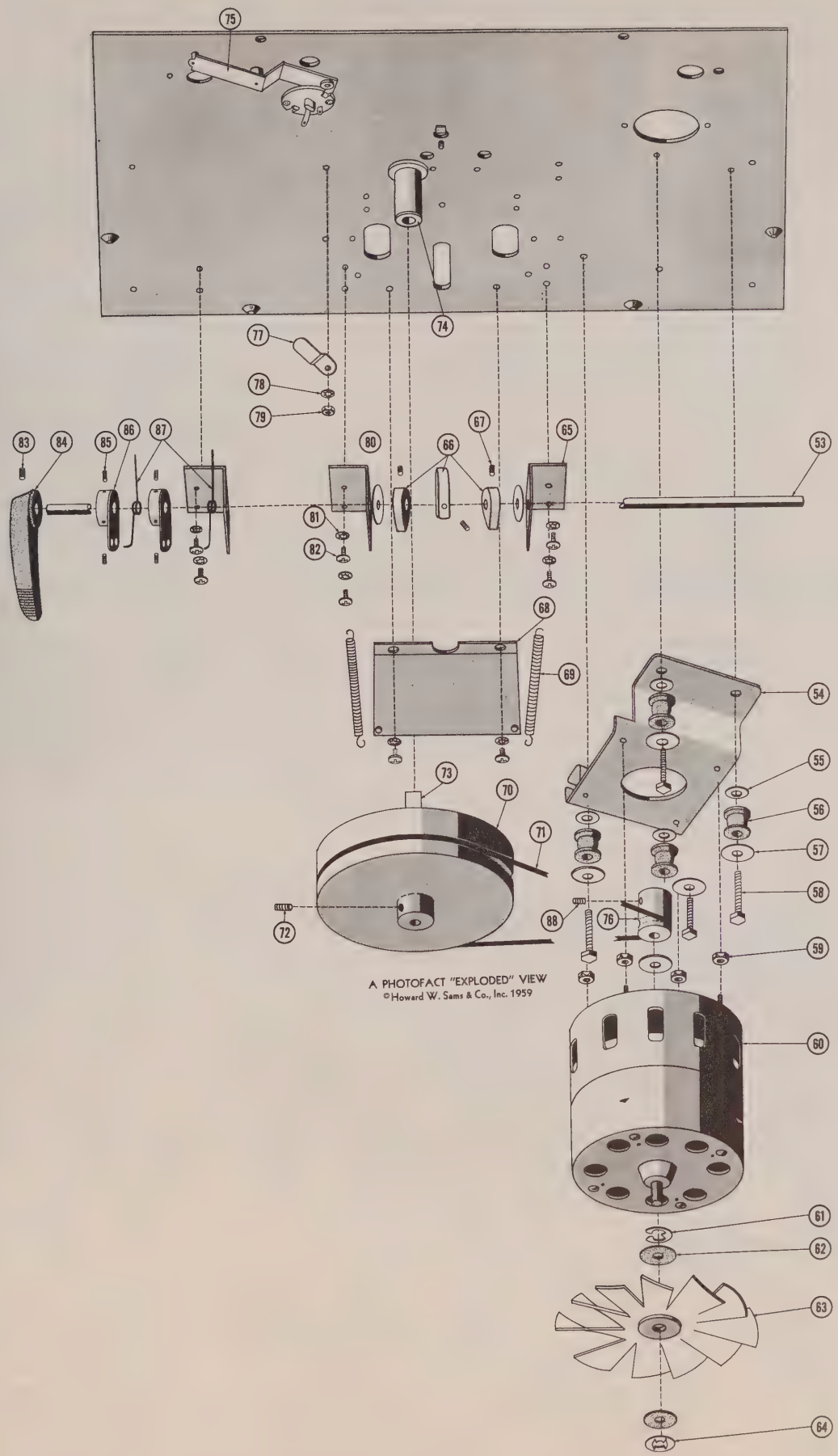


FIG. 4B EXPLODED VIEW OF PARTS BELOW BASEPLATE

TROUBLE CHART (CON'T.)

Symptom	Cause	Remedy
No erase, or incomplete erase.	3. Defective erase circuit.	3. Check voltages per schematic.
Does not record.	1. Faulty microphone cord.	1. Replace microphone cord, if necessary, after checking recorder with another type of input.
	2. Faulty input jack.	2. Check input jack and replace, if faulty.
	3. Faulty tube.	3. Check tubes and replace any faulty ones.
	4. Low bias voltage.	4. See "Bias" under "Electrical Adjustments."
	5. Open play-record head (48).	5. Check continuity. After checking continuity, demagnetize play-record head (48).
Motor and amplifier do not operate.	1. Defective power supply.	1. Check voltage per schematic.
	2. Damaged power cord.	2. Repair or replace power cord.
	3. Defective On-Off switch.	3. Replace On-Off switch.

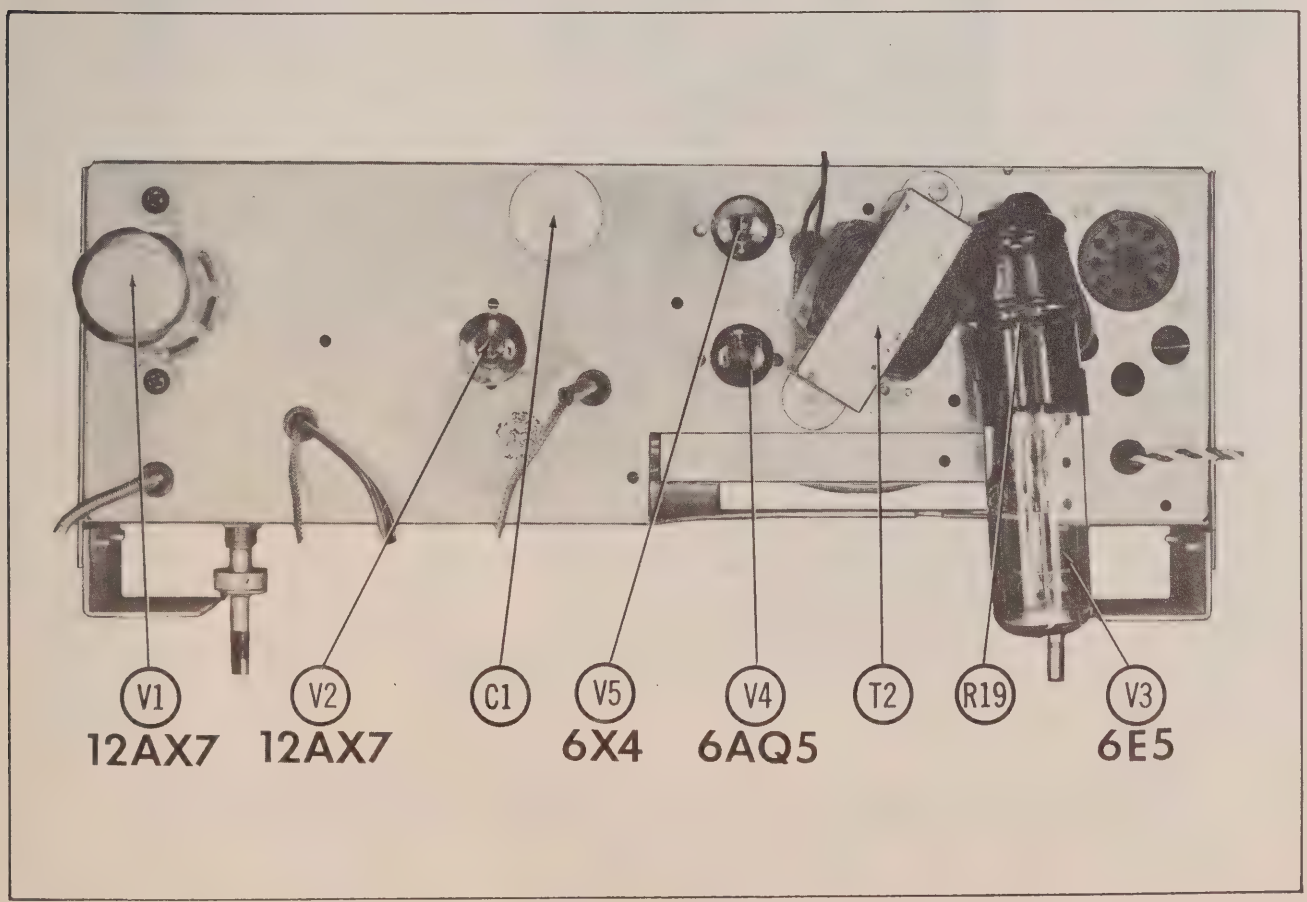
MECHANICAL PARTS LIST

Ref. No.	Part No.	Description
1		Storage Tray Mounting Screws
2		Washer
3	D-540-4	Storage Tray Assembly
4	48-3C-15-1	#8-32 Hex Nut (Used With Fasco Motor)
	57-6C-804-1	#8-32 x 1/4 lg. Phil. R.H. M.S. (Used With Alliance Motor)
5	57-6C-604-2	6-32 x 1/4 Phil. R.H.M.S. Brz.
6	13.339	Indicator Tube Escutcheon
7	B-13.324-2	On-Off-Volume Knob
8	B-13.324-1	Tone Control Knob
9	D-13.329-1	Baseplate
10	33.469	"E" Ring
11	28.163	Linen Washer
12		Felt Washer
13	28.163	Linen Washer
14	B.33.480	Pinch Roller
15	33.469	"E" Ring
16	B-32.332-1	Spring Bushings (2)
17	B-31-398	Plate Return Spring
18		Plate Return Spring Retaining Nut
19	B-32.333-1	Shouldered Nut
20	48-2221	#10 x 32 Hex Nut (Elastic Stop Nut)

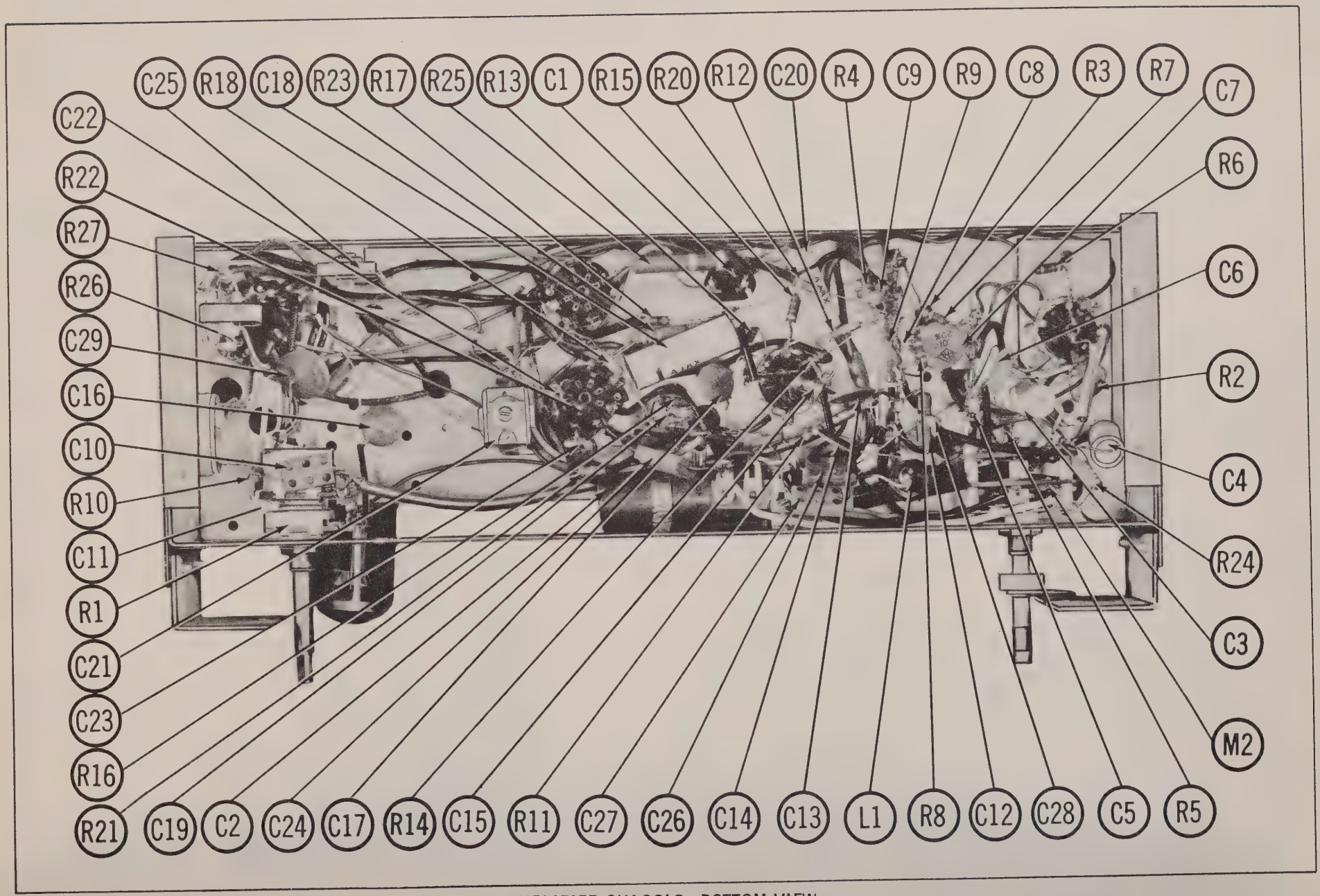
Ref. No.	Part No.	Description
21	C-19.1091-1	Slide Plate
22	57-66A-406-2	#4-3/8 lg. Type A Phil. R.H.M.S. Brz. (8)
23		Internal Lockwasher
24	B-35.947	Pressure Pad Spring Assembly
25	B-31.390	Pressure Pad (2)
26	B-32.329-1	Tape Guide Post
27	35.946-1	Finger Assembly Right
28		Finger Bushing
29	B-19-1083-2	Bearing Angle Right
30		Hex Head Finger Mounting Screws (2)
31	73-2241-143	Flat Washer 5/8 Dia x .260 x 1/32 (2)
32		Hex Washer (2)
33		Screws (2)
34		Screws
35		Lockwasher (2)
36	B-33.416	#6 Terminal Lugs (2)
37	73-2241-145	Flat Washer 7/16 O.D. x .154 x .045 Stl. C.P. (4)
38	D-19.1088-1	Finger Release (Right)
39		Finger Release Springs (2)
40	B-35.963-1	Magazine Guide Assembly (Right)
41		Screws (2)
42		Lockwasher (2)

Ref. No.	Part No.	Description
43	B-19.1087	Slide Plate Clamp (2)
44	D-19.1088-2	Finger Release (Left)
45	B-35.963-2	Magazine Guide Assembly (Left)
46	B-33.531-1	"C" Washer
47	B-13.323	Function Knob
48	D-36.187	Play-Record Head
49	35.946-2	Finger Assembly (Left)
50		Finger Bushing
51	B-19.1083-1	Bearing Angle (Left)
52		Hex Nut
53	B-32.339	Shaft
54	D-19.1085-1	Motor Mounting Plate
55		Washers
56	B-28.190	Rubber Grommet (4)
57	73-2243-70	Flat Washer 5/8 O.D. x 3/8 I.D. x 1/32
58		Hex Screws (3)
59		Hex Nut (4)
60	D-36.189	Motor (Fasco-Round Type)
	D-36.190	Motor (Alliance-Square Type)
61	B-33-418-1	Truarc Retaining Ring 5/8 Dia. x .260 x 1/32
62	73-2254-3	Felt Washer 3/4 O.D. x 1/4 x 1/16 Thk. Brown (2)
63	C-19.1098-1	4" Fan

Ref. No.	Part No.	Description
64	B-33.415	Push-On Fastener
65		Shaft Mounting Angle (2)
66	B-19.1086	Cam
67	57-3589-1	#8-32 x 1/4 lg. Bristol Hd. Set Screw
68		Bracket
69	B-31.386	Finger Tension Spring
70	C-13.334-1	Flywheel
71	B-28.193	Rubber "O" Ring (Belt)
72		Set Screw
73	B-32-378	Capstan (60 Cycle)
74	B-32.335-1	Bearing Housing
75	B-35.774-1	Record Interlock Assy.
76	B-32.376	Motor Pulley
77		Cable Clamp
78		Lockwasher
79		Hex Nut
80		Spring Washers (2)
81		Lockwasher
82		Phil. Screw
83		Set Screw
84	B-13.325	Release Knob
85		Set Screw
86	B-35.859-1	Switch Lever Assembly (2)
87		Springs (2)
88		Set Screw



AMPLIFIER CHASSIS - TOP VIEW



AMPLIFIER CHASSIS - BOTTOM VIEW

ELECT. PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Preamp. -Bias Osc.	12AX7	
V2	AF Amp. -Record Amp.	12AX7	
V3	Record Level Indicator	6E5	
V4	Output	6AQ5	
V5	Rectifier	6X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	Wilcox-Gay PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■30	250	B-5.437	AFH3-89	C0670	FP331	TMT-74	T-326	TVL-3513
B	▲30	250							
C	30	25							
C2A	10	200	B-5.444	PRS250V1010	BBRD8D25	TCD52	TDLD-26	MTD-4510	TVA-2722
B	10	200							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	Wilcox-Gay PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C3	.047	200		D-4.148-21	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C4	.047	200		D-4.148-21	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C5	1000			C-4.109-9	SI 1000	D6-102	LT6D1	UC-521	5GA-D1	
C6	10000			C-4.115-19	DI-10000	DD-103	BYA6S1	B-110	5GA-S1	
C7	10000			C-4.115-19	DI-10000	DD-103	BYA6S1	B-110	5GA-S1	
C8	470			C-4.109-2	SI 470	D6-471	LT6T47	UC-5347	5GA-T47	
C9	1500			C-4.109-13	SI 1500	D6-152	LT6D15	UC-5215	5GA-D15	
C10	100				1468-0001	DD-101	5W5T1	MC235	1FM-31	
C11	3000			C-4.109-25	SI 3000	D6-302	LT6D3	UC-523	5GA-D3	
C12	100				1468-0001	DD-101	5W5T1	MC235	1FM-31	
C13	10000			C-4.115-19	DI-10000	DD-103	BYA6S1	B-110	5GA-S1	
C14	10000			C-4.115-19	DI-10000	DD-103	BYA6S1	B-110	5GA-S1	
C15	220			C-4.109-11	SI 220	D6-221	LT6T22	UC-5322	5GA-T22	
C16	10000			C-4.115-19	DI-10000	DD-103	BYA6S1	B-110	5GA-S1	
C17	5000			C-4.115-18	DI-5000	DD-502	BYA10D5	B-250	5GA-D5	
C18	.047	400		D-4.148-58	P488N-047	DD-471	CUB4S47	GEM-4147	4TM-S47	
C19	470		10%	C-4.109-37		D6-471	HVB30T47		5GA-T47	
C20	.027	200		D-4.148-18	P288N-025	DF-303	CUB6S3	GEM-4125	4TM-S 25	
C21	850-1150			B-4.132-1						
C22	470		10%	C-4.109-37		D6-471	HVB30T47	JL-347	5GA-T47	
C23	470			C-4.109-2	SI 470	D6-471	LT6T47	UC-5347	5GA-T47	
C24	1000		10%	D-4.104-88	1469-001		1R5D1	MCB251	MS-21	
C25	20-280			B-4.119-4						
C26	47		10%	D-4.104-24	1469-000047	DD-470	22R5Q47		MS-447	
C27	820		10%	D-4.104-82	1469-00082		22R5T82		MS-382	
C28	470			C-4.109-2	SI 470	D6-471	LT6T47	UC-5347	5GA-T47	
C29A	4000			B-4.131-1	BPD-004	DD-402	BYC6DD4	B-240	5GA-D4	
B	4000				BPD-004	DD-402		B-240	5GA-D4	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	Wilcox-Gay PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	250K	½	B-8.237	F1-35		† QJ983	♦ UE3906-S	Tone
B	1meg	½		R2-56				Volume, Tap ⓐ 500K
C	Shaft			Not Req.				
D	Switch			KR-1				

† "Concentrikit" Equivalent: K-6 Kit, Base Elements & Shafts: B13-130, P17-115 (Panel)
(Not available as a factory assembled unit) B19-139X, R14-128 (Rear)
76-1 (Switch)

♦ "STA-LOC" Equivalent: FD254A, OF1500 (Panel), RU16T55, IS2000 (Rear), US-41 (Switch)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Wilcox-Gay PART No.	NOTES
R2	1.5meg		D-7.101-148	
R3	8200Ω	1	D-7.102-62	
R4	22K		D-7.101-72	
R5	680K		D-7.101-134	
R6	4.7meg		D-7.101-178	
R7	150K		D-7.101-107	
R8	470K		D-7.101-128	
R9	68K		D-7.101-93	
R10	100K		D-7.101-100	
R11	6.8meg		D-7.101-184	
R12	180K		D-7.101-111	
R13	220K		D-7.101-114	
R14	120K		D-7.101-104	
R15	2200Ω		D-7.101-30	
R16	220K 5%		D-7.101-113	
R17	1meg		D-7.101-141	
R18	390K 5%		D-7.101-125	
R19	1meg		D-7.101-141	
R20	4700Ω		D-7.101-44	
R21	470K		D-7.101-128	
R22	1.2meg		D-7.101-144	
R23	330Ω	1	D-7.102-2	
R24	330K		D-7.101-121	
R25	470Ω	2	D-7.103-72	
R26	47Ω		D-7.101-250	
R27	47Ω		D-7.101-250	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Wilcox-Gay PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Bias Osc. Coil	B-1.557					

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	Wilcox-Gay PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⓐ .28A	420VCT ⓐ .040A	6.3V ⓐ 1.2A	D-9.263	P9210	P-3147		PC8418	24R11U	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	Wilcox-Gay PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5200Ω	3-4Ω	C-9.264	Z1109	A-3019	AU-606	A-8092	26S49	S-5X	

SPEAKER

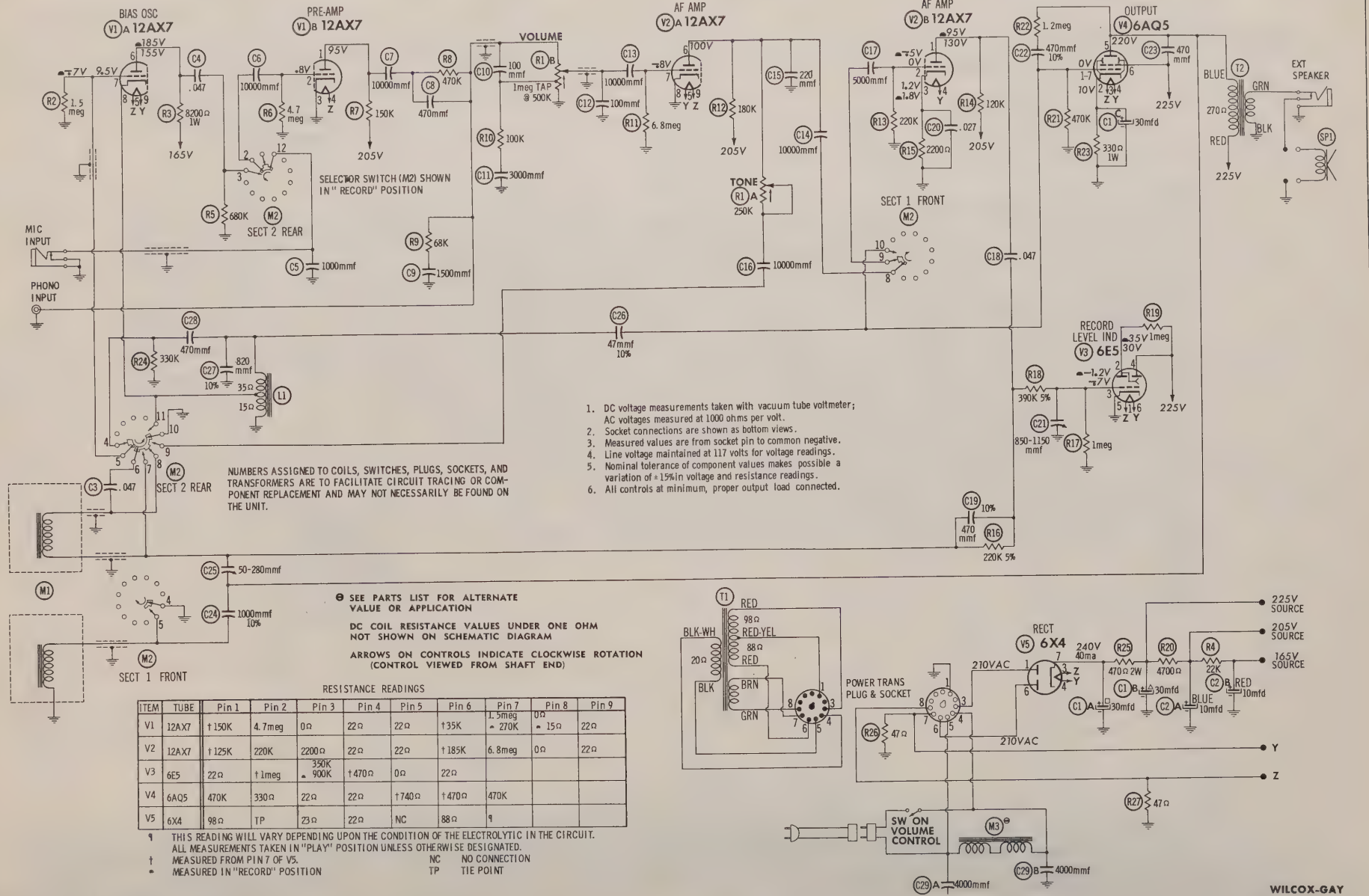
ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	Wilcox-Gay PART No.	QUAM PART No.	NOTES
SP1	4" x 6"	PM	3-4Ω	C-30.351-1	46A1	

MISCELLANEOUS

ITEM No.	PART NAME	Wilcox-Gay PART No.	NOTES
M1	Head	D-36.187	Record-Play-Erase
M2	Switch	B-11.246	Record-Play (Rotary, Wafer Type)
M3	Motor	D-36.189	Fasco (Round Type)
	Motor	D-36.190	Alliance (Square Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) .....Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†150K	4.7meg	0Ω	22Ω	22Ω	†35K	1.5meg •270K	0Ω •15Ω	22Ω
V2	12AX7	†125K	220K	2200Ω	22Ω	22Ω	†185K	6.8meg	0Ω	22Ω
V3	6E5	22Ω	†1meg	350K •900K	†470Ω	0Ω	22Ω			
V4	6AQ5	470K	330Ω	22Ω	22Ω	†740Ω	†470Ω	470K		
V5	6X4	98Ω	TP	23Ω	22Ω	NC	88Ω	¶		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT. ALL MEASUREMENTS TAKEN IN "PLAY" POSITION UNLESS OTHERWISE DESIGNATED.

† MEASURED FROM PIN 7 OF V5.

• MEASURED IN "RECORD" POSITION

NC NO CONNECTION

TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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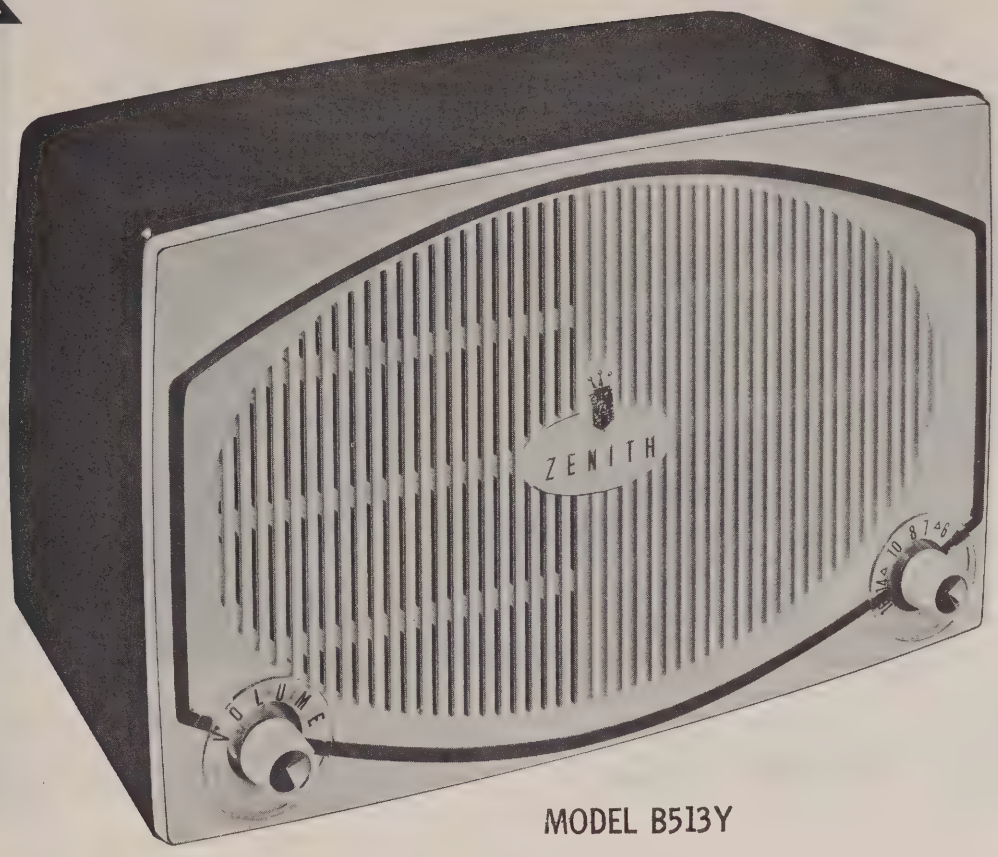
ZENITH MODELS B513F,
L, V, Y (Ch. 5B01)



MODEL B513Y

TRADE NAME	Zenith Models B513F, B513L, B513V, B513Y (Ch. 5B01)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois
TYPE SET	AC-DC Operated 5 Tube AM Receiver
POWER SUPPLY	110 - 120 Volts AC-DC
RATING	28 Watts, .3 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	530KC - 1625KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1,A2, A3, A4..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A5, A6..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.5mfd.	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400∿ Mod.)	600KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1600KC	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	1400KC	"	A6	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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J1

SET 442 FOLDER 18

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■80	150	22-2351	AFH2-19	XB0181	FP216	TMD-16	TVL-2442.1	
B	▲40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.047	200		22-2792	P288N-047		CUB4S47	GEM-4147	4TM-S47	
C3	100			22-5	BPD-0001	DD-101	L10T1	2HV-310	5GA-T1	
C4	.047	200		22-2792	P288N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C5	.0033	400		22-11	P488N-0033	D6-332	CUB6D33	GEM-6233	6TM-D33	
C6	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C7	470	1000		22-6	HVD15-470	DD-471	BYA10T47	B-347	5GA-T47	
C8	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C9	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C10	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1.5meg	½	63-4404	BT-82	A47F3-2meg	Q18-139X	UT451	Volume, Tap@1meg
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KR1	SWE-12	76-1	US-26	

RESISTORS

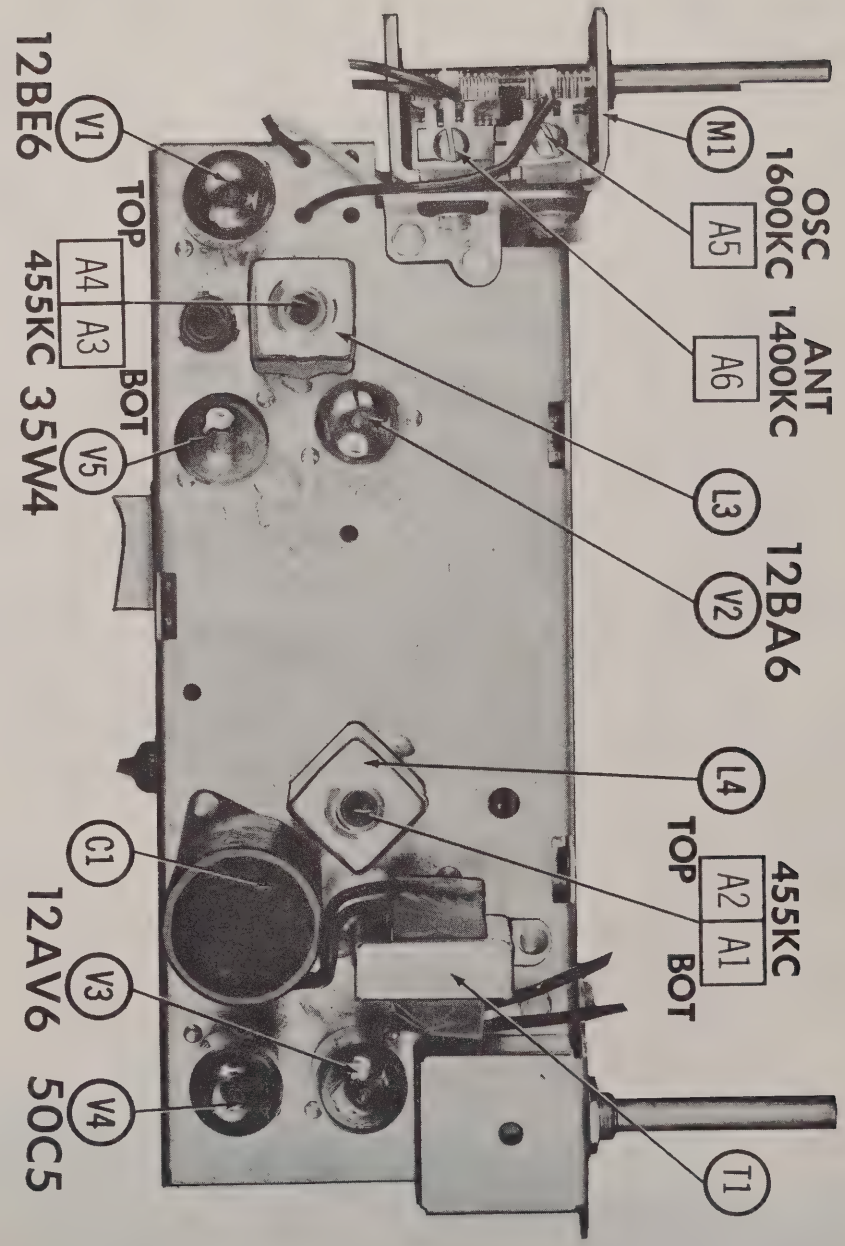
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	ZENITH PART No.	NOTES
R2	22K		63-1842	
R3	47K		63-1856	
R4	470K		63-1898	
R5	4.7meg		63-1940	
R6	2.2meg		63-1926	
R7	470K		63-1898	
R8	100K		63-1870	
R9	470K		63-1898	
R10	150Ω		63-1750	
R11	1000Ω	1	63-965	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA ZENITH PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Loop Ant.	S-44517					
L2	Osc. Coil	S-43910					
L3	Input IF	95-1504	16-6780	BC-356	13-PC1	RF-4	
L4	Output IF	95-1505	16-6781		13-PC6		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2500Ω	3-4Ω	95-1637	Z1101 ①	A-3025①	AU-605①	A-3332 ①	26S58	S-12X①	① Use original frame and rotate 90°

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	
SP1	6"x9"	PM	3.2Ω	49-869	69A3	

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Cap.	22-3098	2 Gang, Ant. 37-362mmf, Osc. 29-120mmf

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

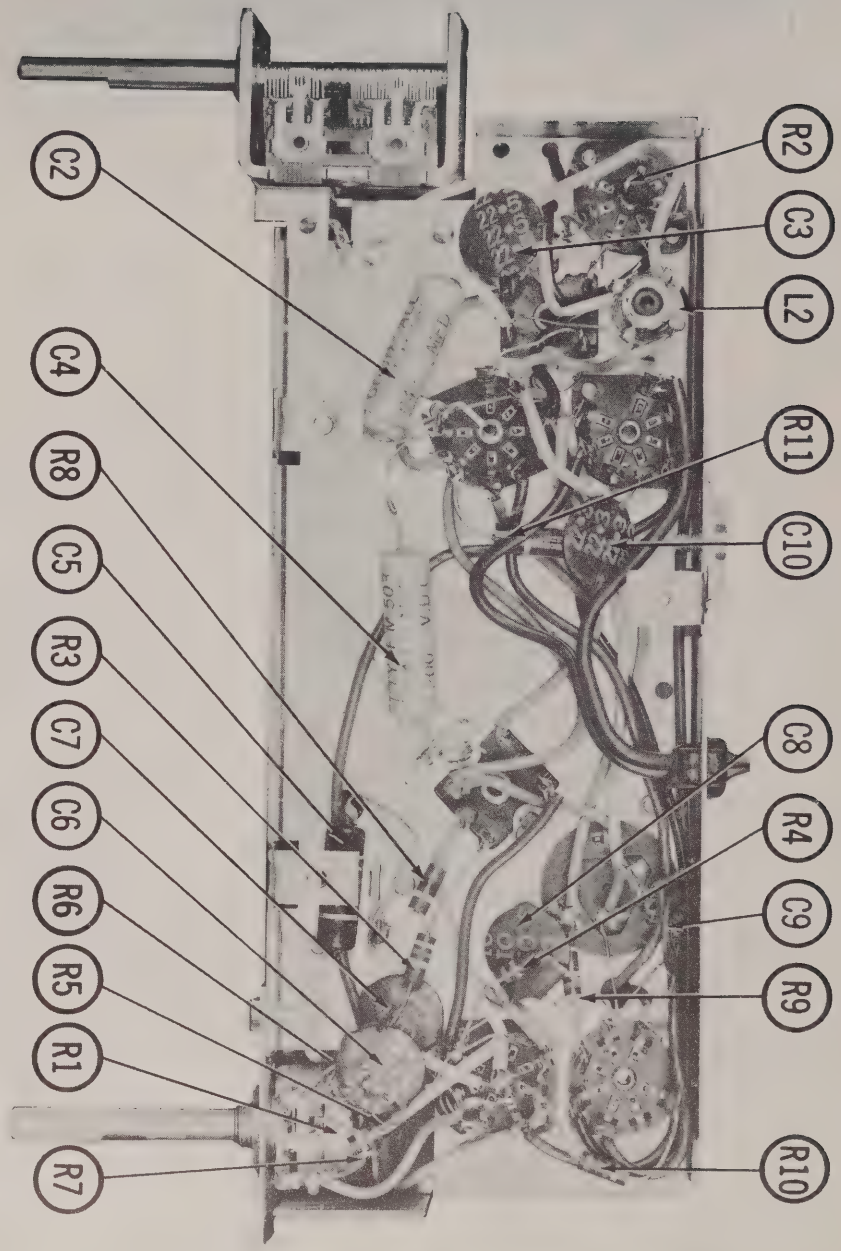
NAME	PART NO.	DESCRIPTION
Knob	S-44803	Tuning And Dial Assembly, Model B513Y
Knob	S-44805	Tuning And Dial Assembly, Model B513F, V
Knob	S-44804	Tuning And Dial Assembly, Model B513L
Knob	S-44790	Volume And Trim Assembly, Model B513Y
Knob	S-44791	Volume And Trim Assembly, Model B513L
Knob	S-44792	Volume And Trim Assembly, Models B513F, V
Cabinet	14-2499	Model B513Y
Cabinet	14-2501	Model B513F
Cabinet	14-2500	Model B513L
Cabinet	14-2502	Model B513V

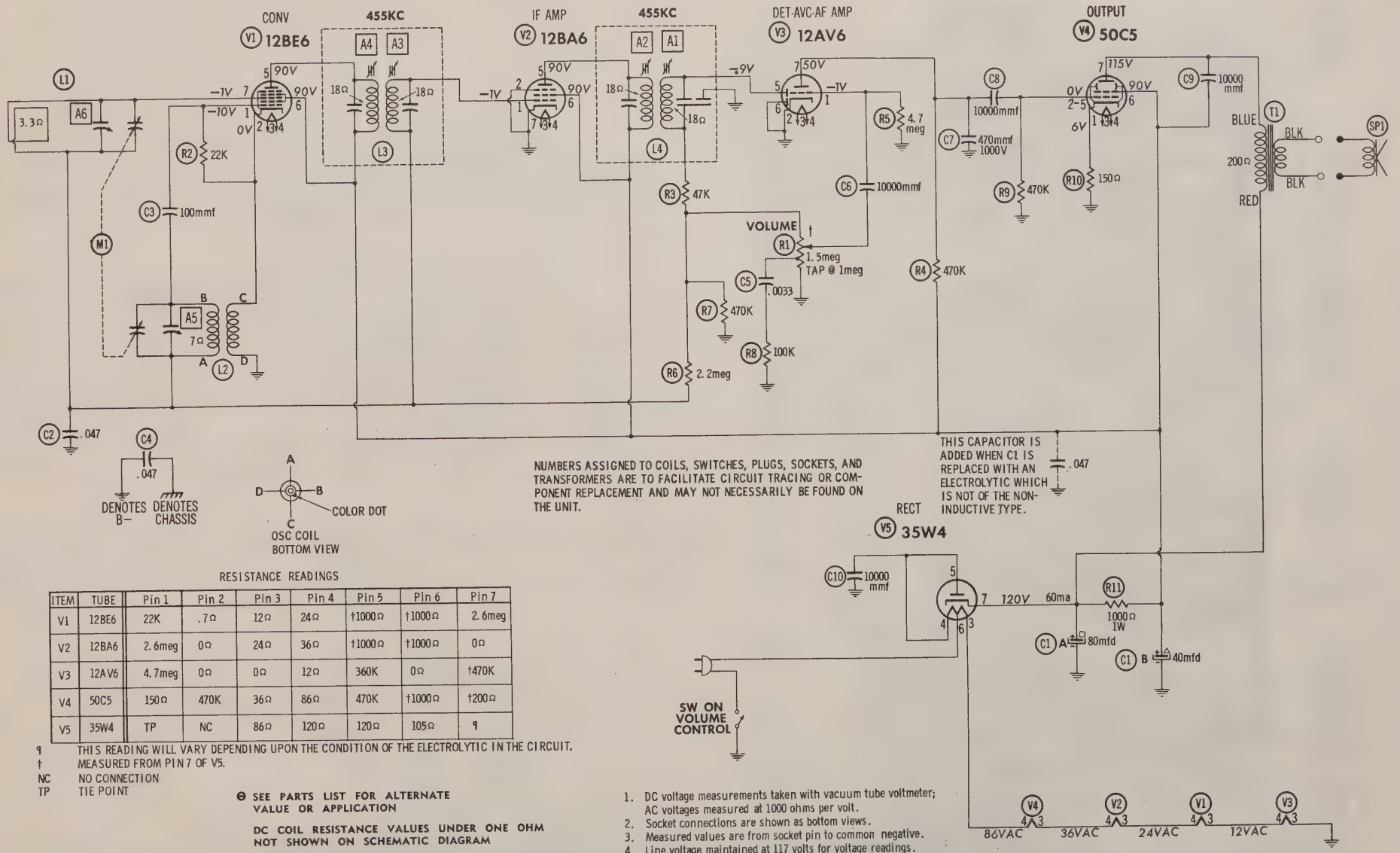
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

CHASSIS-BOTTOM VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.7Ω	12Ω	24Ω	†1000Ω	†1000Ω	2.6meg
V2	12BA6	2.6meg	0Ω	24Ω	36Ω	†1000Ω	†1000Ω	0Ω
V3	12AV6	4.7meg	0Ω	0Ω	12Ω	360K	0Ω	†470K
V4	50C5	150Ω	470K	36Ω	86Ω	470K	†1000Ω	†200Ω
V5	35W4	TP	NC	86Ω	120Ω	120Ω	105Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ZENITH MODELS B513F, L, V, Y (Ch. 5B01)

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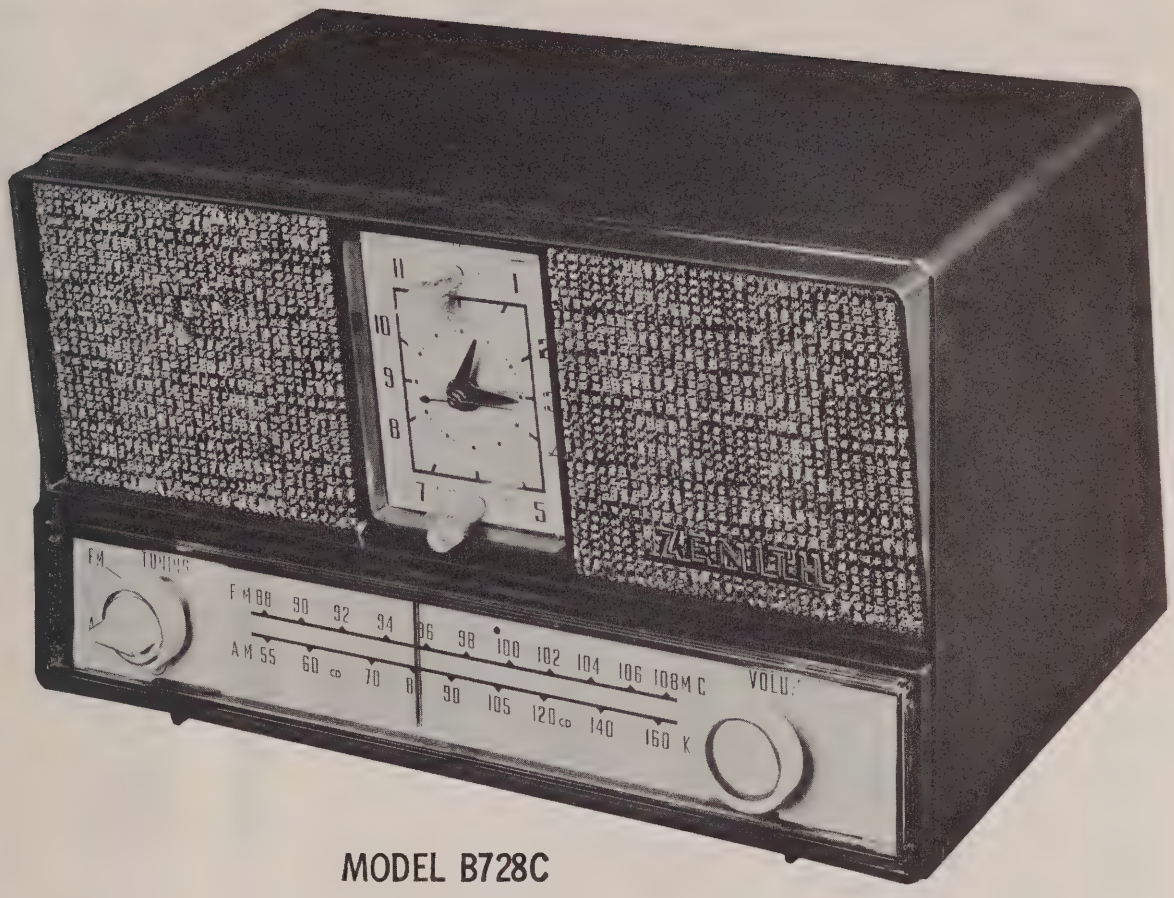
ZENITH MODELS
B728C, F, W (Ch. 7A03)

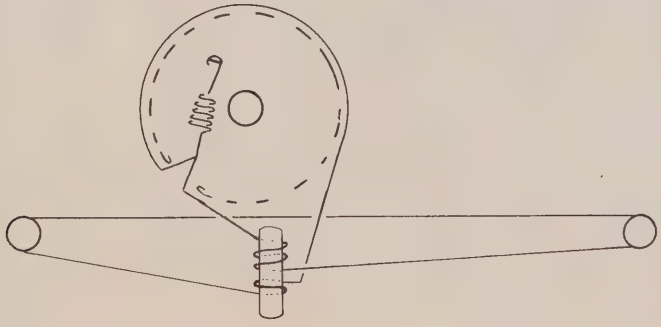


MODEL B728C

ZENITH MODELS
B728C, F, W (Ch. 7A03)

TRADE NAME	Zenith Models B728C, B728F, B728W (Ch. 7A03)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	AC-DC Operated 7 Tube FM-AM Receiver With Electric Clock		
POWER SUPPLY	110 - 120 Volts AC-DC	RATING	32 Watts, .35 Amp. @117 Volts AC
TUNING RANGE-BROADCAST	540-1650KC	FREQ. MOD.	88 - 108MC

DIAL CORD STRINGING



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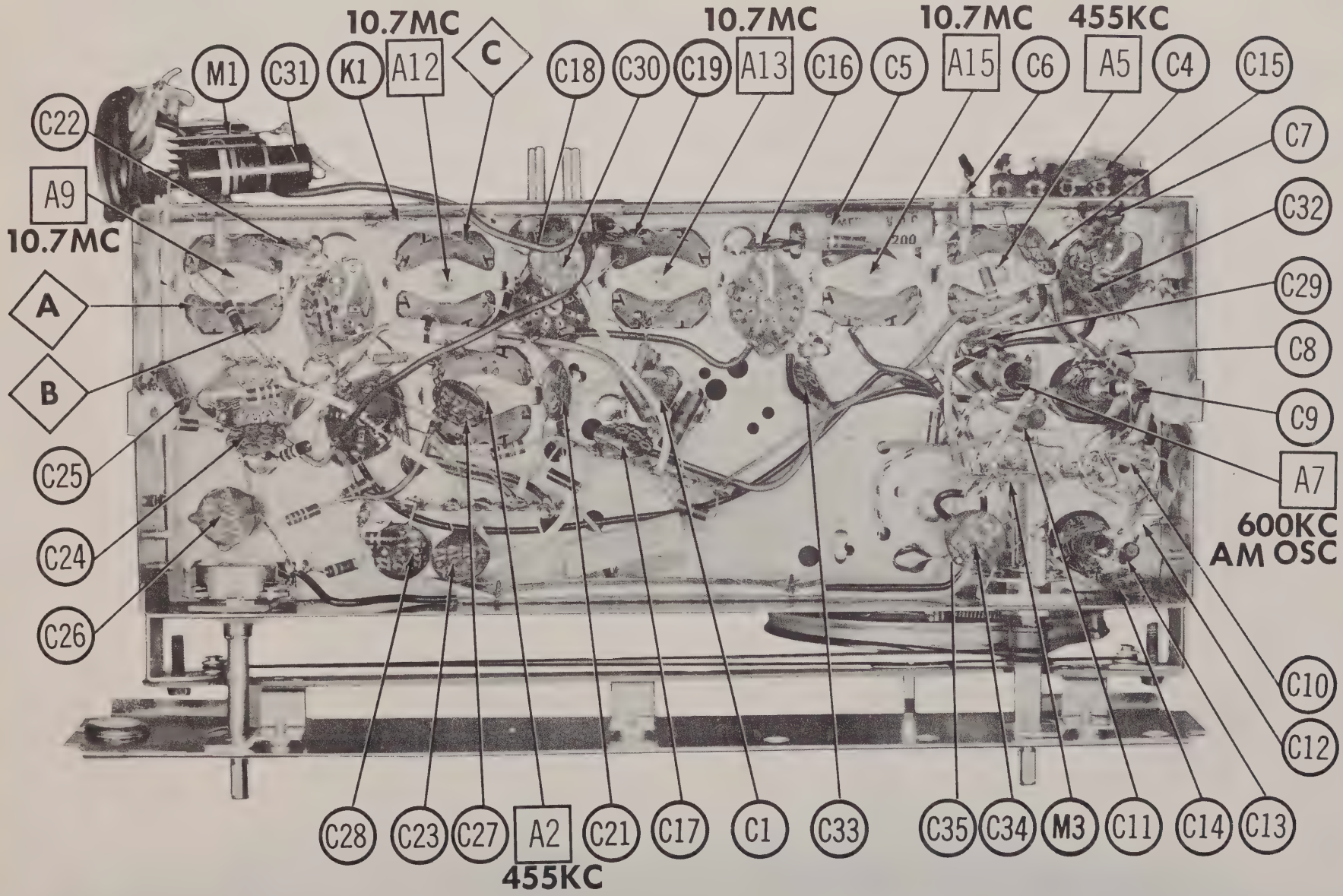
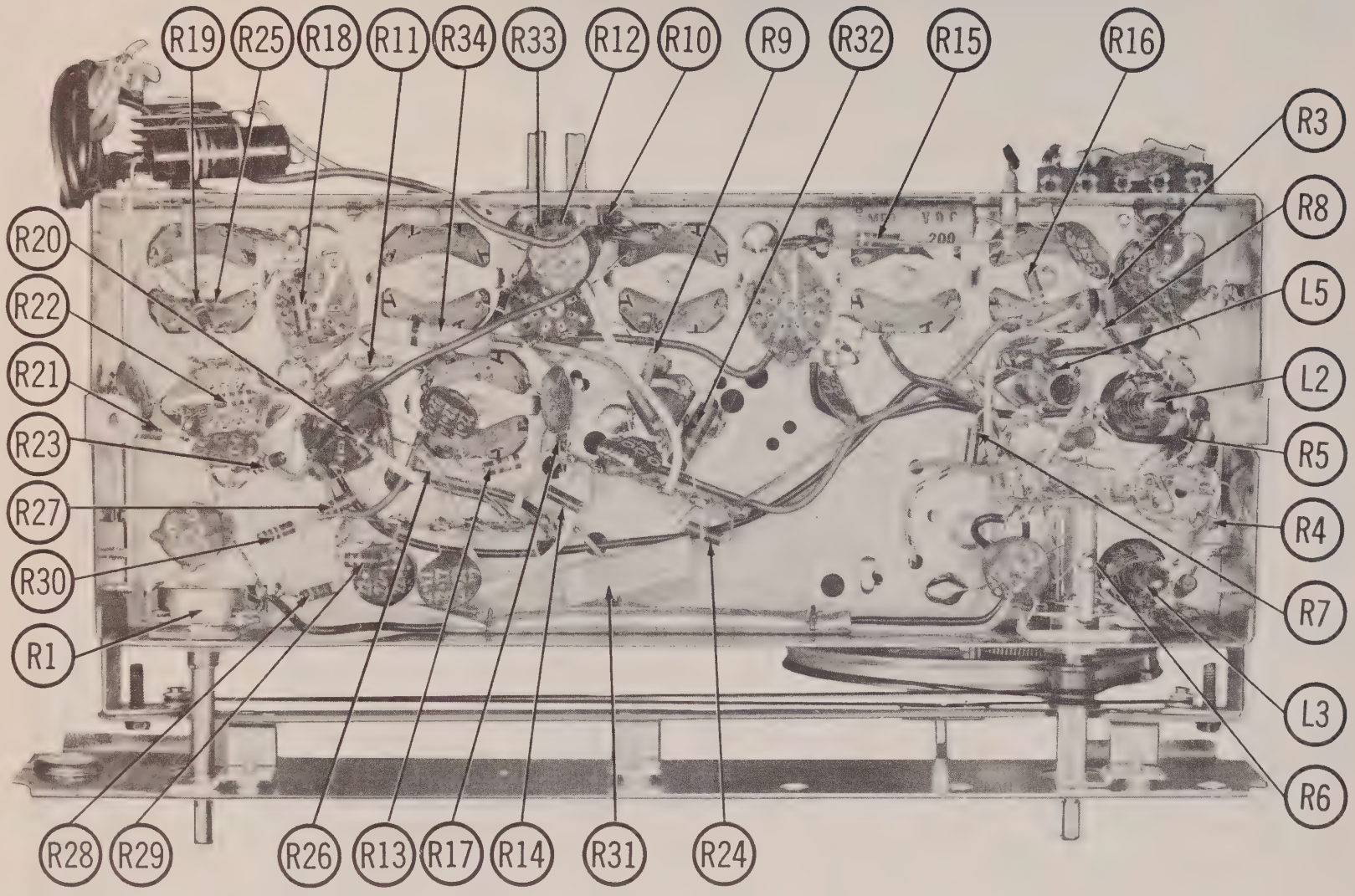
SET 442 FOLDER 19



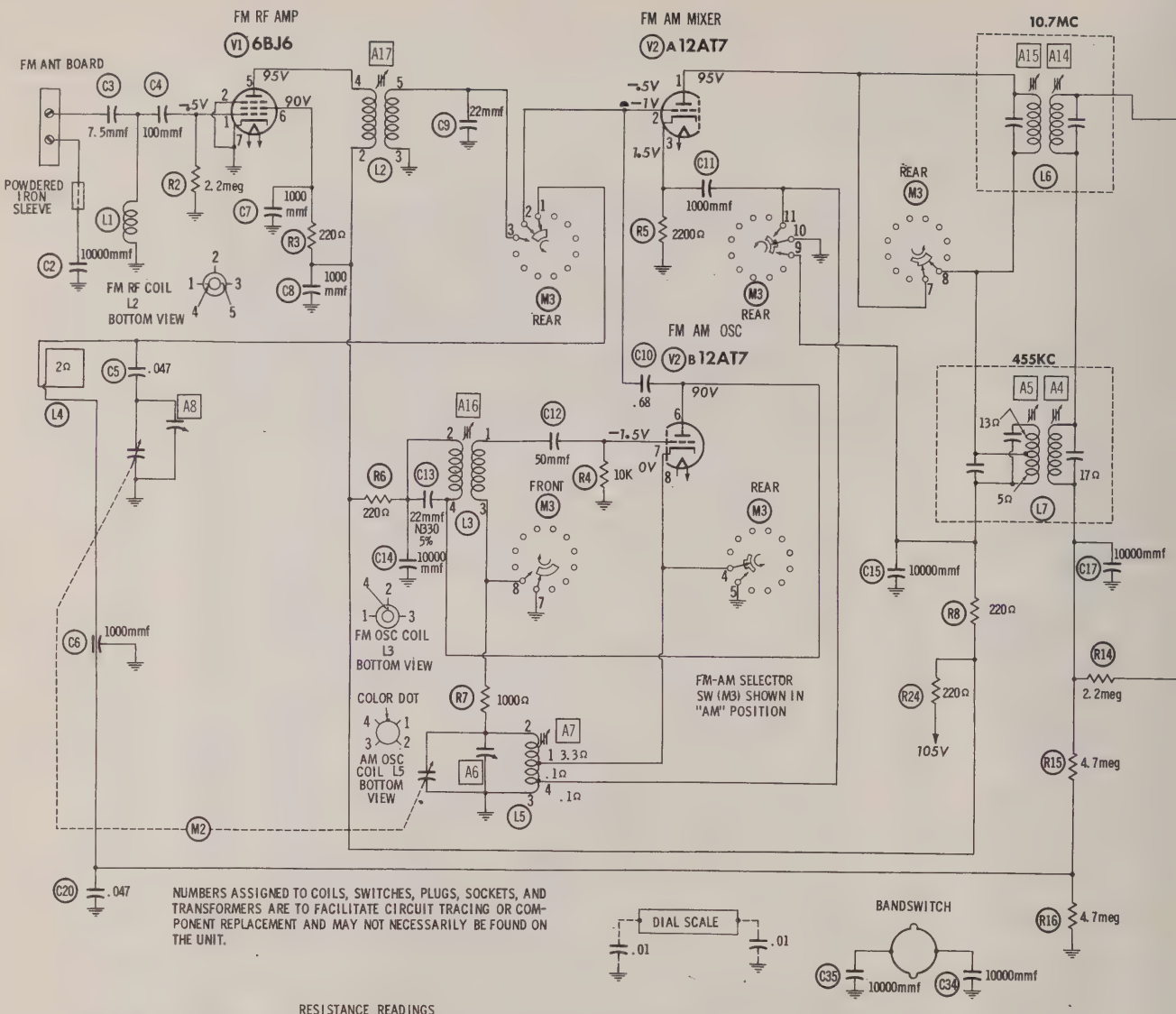
CHASSIS BOTTOM VIEW - CAPACITOR, MISC. & ALIGN. IDENT.



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

MODEL B728C (CH. 7A03)

ZENITH


FM RF AMP
V1 6BJ6
FM AM MIXER
V2A 12AT7
10.7MC
FM ANT BOARD
POWDERED IRON SLEEVE
FM RF COIL L2 BOTTOM VIEW
FM AM OSC
V2B 12AT7
455KC
REAR
FRONT
FM OSC COIL L3 BOTTOM VIEW
COLOR DOT
AM OSC COIL L5 BOTTOM VIEW
FM-AM SELECTOR SW (M3) SHOWN IN "AM" POSITION
105V
DIAL SCALE
BANDSWITCH
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BJ6	2.2meg	0Ω	120Ω	107Ω	†1200Ω	†1400Ω	0Ω		
V2	12AT7	†1400Ω	0Ω ▪4.7meg	2200Ω	107Ω	95Ω	†1400Ω	10K	0Ω ▪2Ω	NC
V3	12BA6	2.8meg	0Ω	95Ω	82Ω	†1200Ω	†1200Ω	0Ω		
V4	12BA6	100K	0Ω	82Ω	70Ω	†1200Ω	†1200Ω	100Ω		
V5	12AU6	100K	0Ω	31Ω	19Ω	†15K	†15K	0Ω		
V6	19T8	150K	150K	300K	0Ω	19Ω	700K	0Ω	4.7meg	†470K
V7	35C5	150Ω	470K	120Ω	140Ω	470K	†1000Ω	†250Ω		

▪ MEASURED IN "AM" POSITION
† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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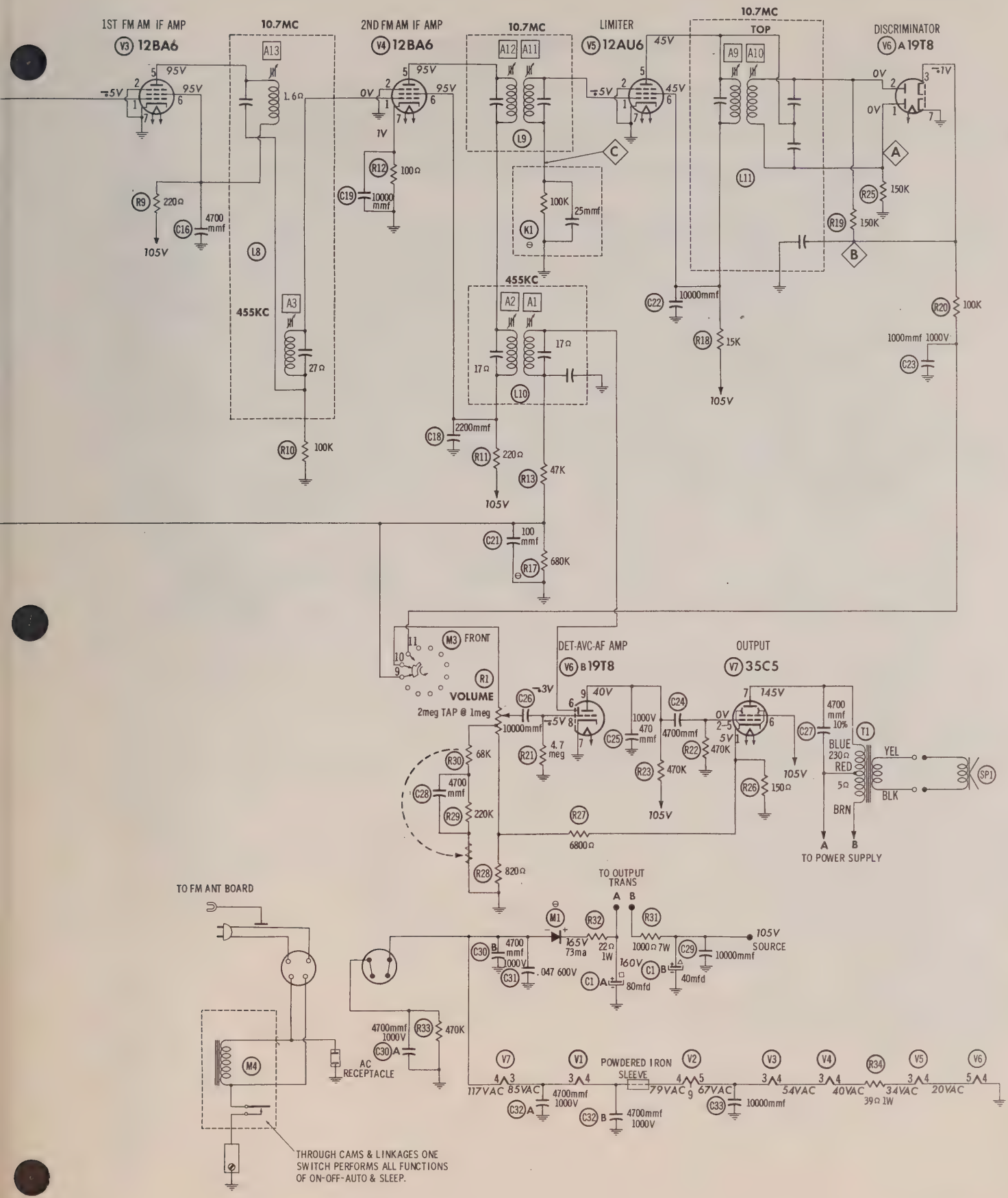


ZENITH MODELS
B728C, F, W (Ch. 7A03)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and chassis.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Suggested alignment tools: A1 thru A5, A7, A9 thru A15..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A6, A8..... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05mfd.	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	455KC (400∿ Mod.)	AM	Point of non-interference	Across voice coil	A1, A2, A3, A4, A5	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001mfd to reduce hum modulation.
2.		Loop	1600KC	"	Tune to 1600KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	600KC	"	Tune to 600KC signal	"	A7	"
4.		"	1400KC	"	Tune to 1400KC signal	"	A8	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR & VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.05mfd.	High side to pin 1 (grid) of 12AU6 (V5). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A9	Adjust for maximum deflection.
6.	"	"	"	FM	"	DC probe thru 1meg to point Ⓑ. Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
7.	"	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A11, A12, A13, A14, A15	Adjust for maximum deflection.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR & OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	.05mfd.	High side to pin 1 (grid) of 12AU6 (V5). Low side to chassis.	10.7MC (450KC SWP)	FM	Point of non-interference	Vert. amp. thru 47K to point Ⓐ. Low side to chassis.	A9	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
6.	.05mfd.	"	"	"	"	Vert. amp. thru 27K to point Ⓑ. Low side to chassis.	A10	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.
7.	"	High side to pin 1 (grid) of 12AT7 (V2). Low side to chassis.	"	"	"	Vert. amp. to point Ⓒ. Low side to chassis.	A11, A12, A13, A14, A15	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	270Ω Carbon Resistor	High side thru 270Ω to FM antenna terminal. Low side to chassis.	98MC (Unmod.)	FM	98MC	DC probe to point Ⓒ. Common to chassis.	A16, A17	Adjust for maximum deflection.

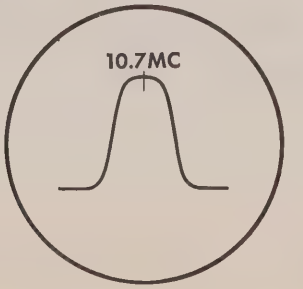


FIG. 1

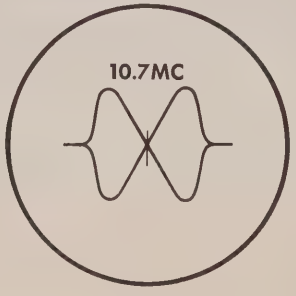


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amplifier	6BJ6	
V2	FM AM Mixer-FM AM Osc	12AT7	
V3	1st FM-AM IF Amp.	12BA6	
V4	2nd FM-AM IF Amp.	12BA6	

ITEM No.	USE	TYPE	NOTES
V5	FM Limiter	12AU6	
V6	Discriminator-AM Det., AVC-AF Amp.	19T8	
V7	Output	35C5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■80	150	22-3056	AFH2-19	XB0181	FP216	TMD-16	TVL-2442.1	
B	▲40	150							

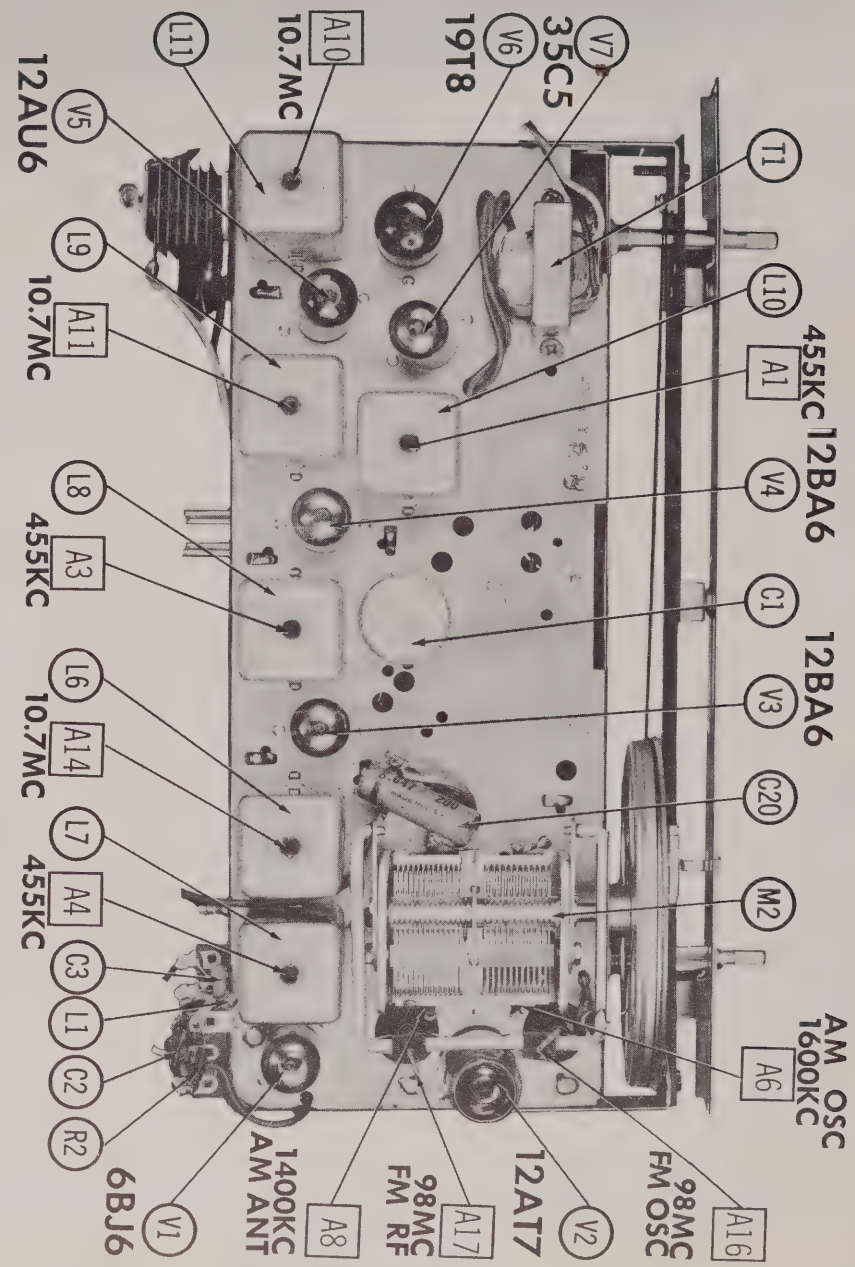
FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper *Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C3	7.5			22-1852					5TCCB-V75S *	
C4	100			22-5	BPD-0001	DD-101	L10T1	UC-531	5GA-T1	
C5	.047	200		22-2792	P288N-047	DF-503	CUB4S47	GEM-4147	2TM-S47	
C6	1000			22-2732	EF001	MFT-1000			503C-D1	
C7	1000			22-1676	SI 1000	D6-102	LT6D1	B-210	5HK-D1	
C8	1000			22-1676	SI 1000	D6-102	LT6D1	B-210	5HK-D1	
C9	22			22-1506	SI 22	D6-220	LT6Q22	UC-5422	5GA-Q22	
C10	.68			22-1766		TCZR68				
C11	1000			22-1676	SI 1000	D6-102	LT6D1	B-210	5HK-D1	
C12	50		N330 5%	22-1376						
C13	22			22-1506	DI 22	DD-220	L10Q22	UC-5422	5GA-Q22	
C14	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C15	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	4700			22-14	BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C17	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C18	2200			22-18	BPD-0022	DD-222	BYA10D22	B-222	5HK-D22	
C19	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C20	.047	200		22-2792	P288N-047	DF-503	CUB4S47	GEM-4147	2TM-S47	
C21	100			22-5	BPD-0001	DD-101	L10T1	UC-531	5GA-T1	
C22	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C23	1000	1000		22-17	HVD-15-1000	DD-102	BYA10D1M	B-210	5GA-T1	
C24	4700			22-4	BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C25	470	1000		22-6	HVD-15-470	DD-471	BYA10T47	B-347	5GA-T47	
C26	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C27	4700		10%	22-14				JL-247	5GA-D47S 10%*	
C28	4700			22-14	BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47	
C29	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C30A	4700	1000		22-24	HVD-15-4700	DD2-502	BYA10D47M	B-247	5HK-D47	
B	4700	1000			HVD-15-4700		BYA10D47M	B-247	5HK-D47	
C31	.047	600		22-2569	P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C32A	4700	1000		22-24	HVD-15-4700	DD2-502	BYA10D47M	B-247	5HK-D47	
B	4700	1000			HVD-15-4700		BYA10D47M	B-247	5HK-D47	
C33	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C34	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C35	10000			22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CHASSIS—TOP VIEW



PARTS LIST & DESCRIPTION (continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A B	2meg Shaft	½	63-4074	BT-82 Not Req.	A47F3-2meg KSS-3	Q18-139X Not Req.	UT-451 Not Req.	Volume, Tap@1meg.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		ZENITH PART No.	NOTES
	OHMS	WATT		
R2	2.2meg		63-1926	
R3	220Ω		63-1758	
R4	10K		63-1828	
R5	2200Ω		63-1800	
R6	220Ω		63-1758	
R7	1000Ω		63-1786	
R8	220Ω		63-1758	
R9	220Ω		63-1758	
R10	100K		63-1870	
R11	220Ω		63-1758	
R12	100Ω		63-1744	
R13	47K		63-1856	
R14	2.2meg		63-1926	
R15	4.7meg		63-1940	
R16	4.7meg		63-1940	
R17	680K		63-1905	Note 1
R18	15K		63-1835	
R19	150K		63-1876	
R20	100K		63-1870	
R21	4.7meg		63-1940	
R22	470K		63-1898	
R23	470K		63-1898	
R24	220Ω		63-1758	
R25	150K		63-1876	
R26	150Ω		63-1750	
R27	6800Ω		63-1820	
R28	820Ω		63-1782	
R29	220K		63-1883	
R30	68K		63-1862	
R31	1000Ω	7	63-3296	
R32	22Ω	1	63-3197	
R33	470K		63-1898	
R34	39Ω	1	63-2424	

Note 1. Some versions may use 1meg in this application.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ZENITH PART No.	REPLACEMENT DATA
K1	IF Grid Bias	25mmf, 100K	105-42 ①	Sprague PRC-11

① Separate items may be used in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ZENITH PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	FM Ant. Coil	20-355					
L2	FM RF Coil	S-13871					
L3	FM Osc. Coil	S-15733					
L4	Loop Ant.	S-43504					
L5	AM Osc. Coil	S-43067					
L6	1st FM IF Trans.	95-1150	16-3487*	FM-251▲	1451 ▲		
L7	1st AM IF Trans.	95-1250					
L8A	2nd FM IF Trans.	95-1251					
B	2nd AM IF Trans.						
L9	3rd FM IF Trans.	95-1150	16-3487*	FM-251▲	1451▲		
L10	3rd AM IF Trans.	95-1102	16-6770*	BC-355*	12-C6*		
L11	Discriminator	95-1153					

* Use Adapter Plate. ▲ Enlarge Mtg. Hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	3100Ω Tap@ 300Ω	3-4Ω	95-1617	Z1105	A-3031		A-3336	24S50A	S-16X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	49-824	4A1	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	ZENITH PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.073A	212-23 *	1235AH	T100 SD-94 ①	100A K200①	① Silicon Type

* Alternate Part #212-13

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Tuning Cap.	22-3039	2 Gang,(Ant. 16-486mmf, Osc. 15-150mmf)
M3	Switch	85-599	FM-AM (Rotary Wafer Type)
M4	Clock	S-43496	

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	46-1814	Tuning
Knob	46-1827	Volume
Knob	46-1813	Band Switch
Knob	46-1832	Clock, 2 Used
Cabinet	S-43512	Includes Dial Crystal Assembly, Model B728C
Cabinet	S-43508	Includes Dial Crystal Assembly, Model B728F
Cabinet	S-43511	Includes Dial Crystal Assembly, Model B728W
Dial Pointer	59-331	
Dial Scale	26-601	
Dial Crystal	192-251	
Clock Crystal	192-252	

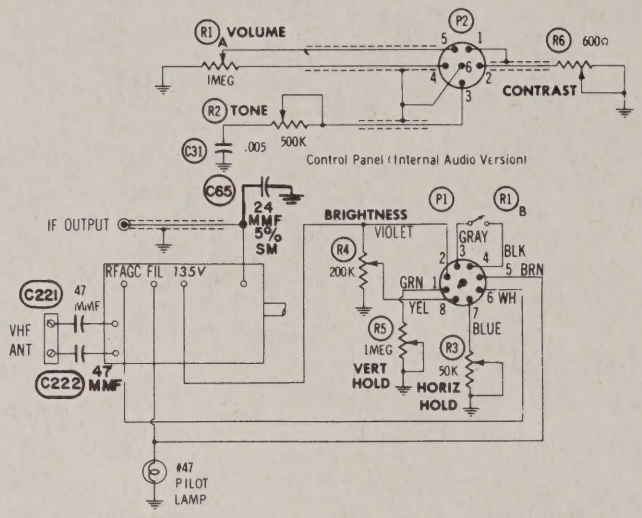
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

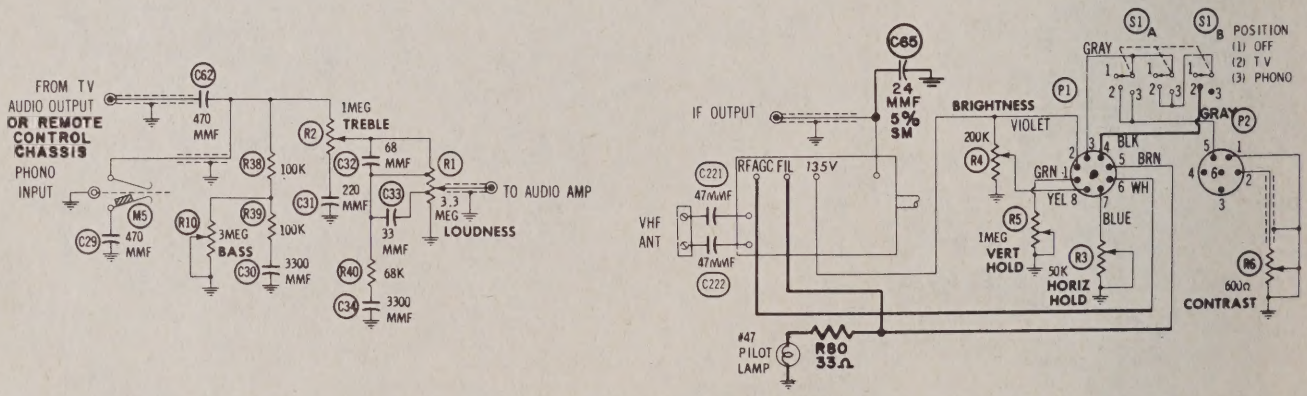
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

CONTROL PANEL SCHEMATIC

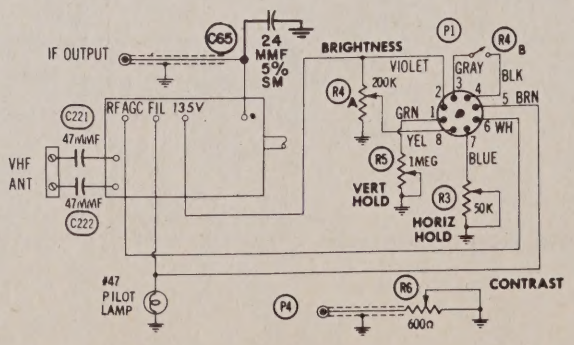
30-01,30-05,30-09,30-10,30-11



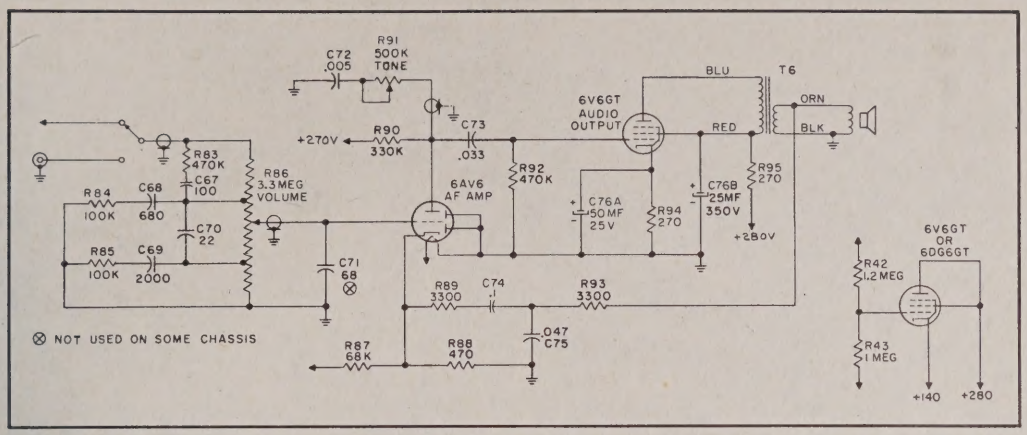
30-02,30-04,30-06,30-07

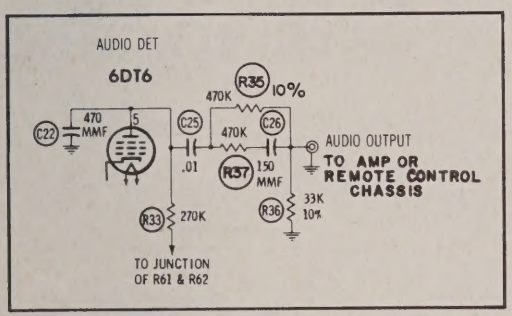


30-03 and 30-08

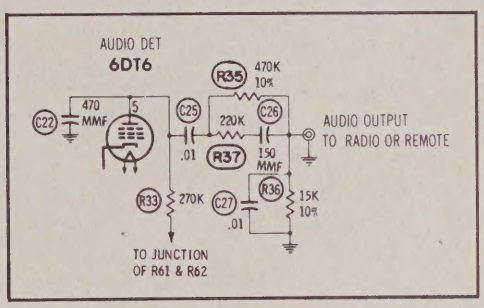


AUDIO OUTPUT SCHEMATIC

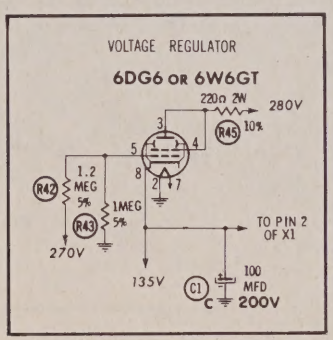




30-02,04,06,07



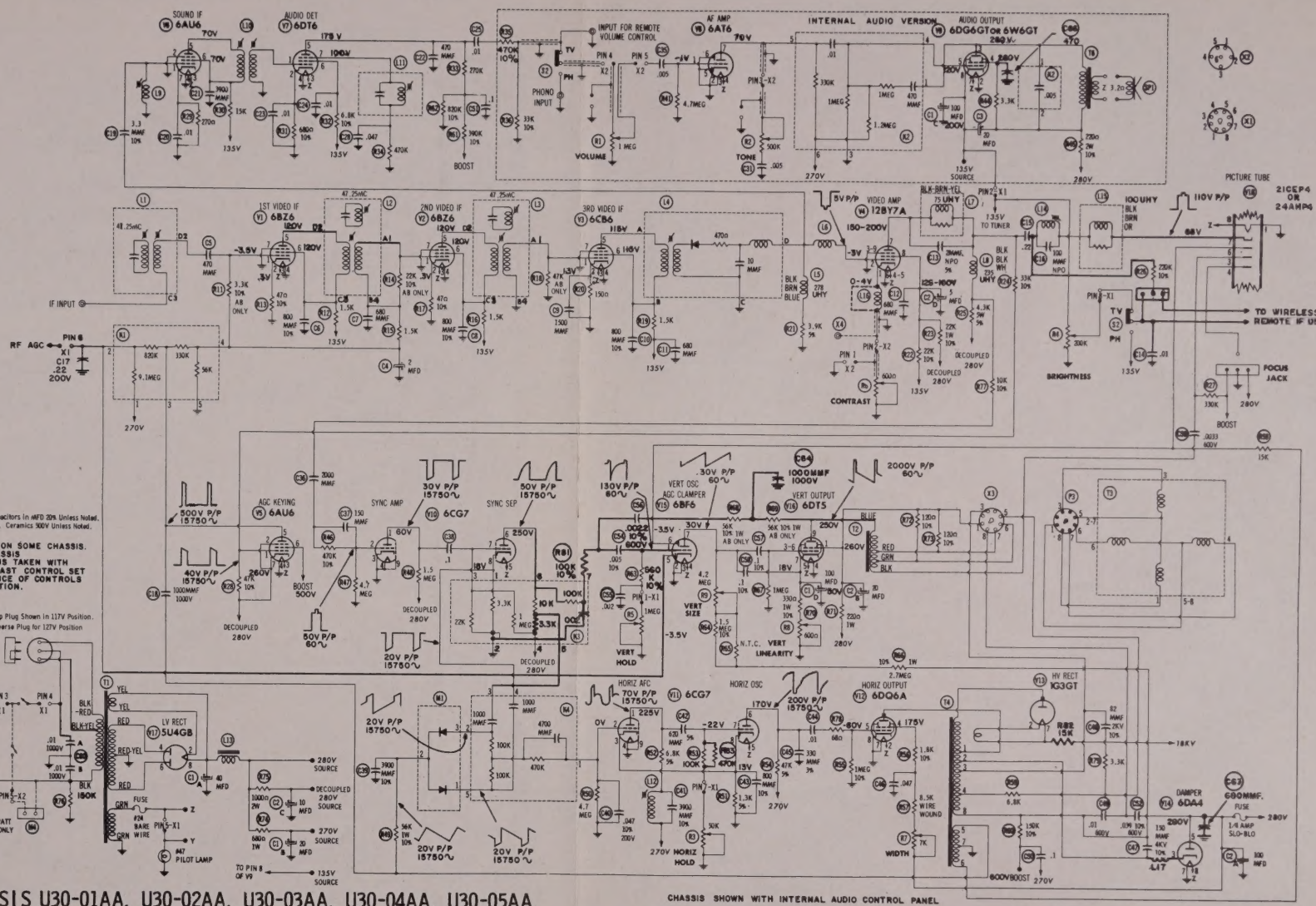
30-03,08



30-02,03,04,06,07,08

CHASSIS DIFFERENCES

Chassis	Audio Circuit	Picture Tube	Controls
30-01	6DG6GT AF Output	21CEP4	Top Tuning
30-02	External Amplifier	24AHP4	Front Tuning
30-03	Radio & Amplifier	24AHP4	Front Tuning
30-04	External Amplifier	24AHP4	Top Tuning
30-05	6DG6GT AF Output	21CEP4	Top Tuning
30-06	External Amplifier	24AHP4	Front Tuning
30-07	External Amplifier	24AHP4	Front Tuning
30-08	Radio & Amplifier	24AHP4	Front Tuning
30-09	6DG6GT AF Output	24AHP4	Front Tuning
30-10	6DG6GT AF Output	24AHP4	Top Tuning
30-11	6DG6GT AF Output	21CEP4	Top Tuning



CHASSIS SHOWN WITH INTERNAL AUDIO CONTROL PANEL

MAGNAVOX CHASSIS U30-01AA, U30-02AA, U30-03AA, U30-04AA, U30-05AA, U30-06AA, U30-07AA, U30-08AA, U30-09AA, U30-10AA, U30-11AA, V30-01AA, V30-02AA, V30-03AA, V30-04AA, V30-05AA, V30-06AA, V30-07AA, V30-08AA, V30-09AA, V30-10AA, V30-11AA,

Schematic Diagram Courtesy of MAGNAVOX CORP.

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